UNITED
NATIONS

A

General Assembly

Distr.
GENERAL

A/CONF/147/PC/3/Add.11 (Part II)
TD/B/AC.17/31/Add.11 (Part II)
15 March 1990

ENGLISH ONLY

TRADE AND DEVELOPMENT BOARD

Intergovernmental Group on the
Least Developed Countries
Seventh session
(Preparatory Committee for the Second
United Nations Conference on Least
Developed Countries)
Geneva, 26 March 1990

SECOND UNITED NATIONS CONFERENCE ON THE LEAST DEVELOPED COUNTRIES:

Preparatory process for the Conference

# Human Resources in the Least Developed Countries Trends in Recent Decades and Prospects for the 1990s

Background paper, February 1990

Contribution by the Department of International
Economic and Social Affairs (DIESA) */

*/ This document has been reproduced as received and in the language of submission only.

GE.90-50701/5756A

United Nations Department of International Economic and Social Affairs

# Human Resources in the Least Developed Countries
# Trends in Recent Decades and Prospects for the 1990s
# Background Paper, February 1990 (Unedited)

## Overview

Human resources have long been neglected in development strategies or approached in a piecemeal fashion. An emphasis on the development of human capabilities is an approach to overall development which regards human beings simultaneously as both the means and ends of economic and social policy, and relies on local resource mobilization and participation as agents of constructive change.

Prominent characteristics of the LDCs which have contributed to their disappointing economic performance are their rapid population growth and related age structure and their low levels of education and health. Some of these characteristics will not change significantly in the short or medium term, and some may last for decades, but others can be changed by appropriate policies and related technical assistance. Increased attention has been given to reducing the rapid rate of population growth, but present rates of population increase range from 2 to almost 4 per cent a year, a pace that would double their population in the span of one generation. This rapid growth of population inhibits the ability of Governments to attain their development objectives, as it increases the pressures on agricultural land and prolongs the high proportion of children. Large increments are added to the working-age population each year, creating the need for correspondingly large increases in employment. At the same time, it is very difficult to finance the increased social services that are needed to offset the declining role of the traditional, mainly rural, extended family.

Human resource development problems of a longer-term nature include high and persistent levels of illiteracy. School enrollment ratios are low, particularly at the more advanced levels, with the result that there is an acute scarcity of trained personnel for most occupational categories. The secondary school enrollment rates of the least developed countries as a whole were only about 20 per cent for males and 10 per cent for females in 1985. Their higher education systems also are weak; consequently, training for many technical occupations must be obtained abroad, and the number of people trained is small in relation to the populations of these countries. Heavy reliance on expatriates in wholesale and retail trade, other service sectors and industrial management is also a reflection of this situation.

Weak institutional infrastructure continues to limit the possibilities for growth, and requires that policy-makers pay greater attention to the development of human resources. Selected aspects of the situation in the LDCs regarding population, education and health are discussed in this background paper.

## A. Population Trends and Issues in the LDCs 1/

### 1. Rising growth rates

The total population of the least developed countries is estimated to be about 440 million, or 8.3 per cent of the world's total in 1990. If current medium variant projections 2/ are borne out, they will have over 9 (9.34) per cent of the world's population by the year 2000 and 12 per cent by 2025. Over half of the total population of the least developed countries live in Asia, and almost all of the rest are in Africa. During 1980-1985, the population of the least developed countries increased on the average by 2.5 per cent per year, down slightly from 2.6 per cent during the 1970s. However, the medium-variant projections suggest that their total population is starting to grow more rapidly, at 2.7 per cent during 1985-90, in part because the proportion of women in the child-bearing ages is rising. It is projected that the growth rate will increase further to 2.9 per cent per year in the 1990s,

READEX FICHE

and then decelerate slowly. In contrast, the developing countries as a whole (excluding China) have had a steady decline in their growth rate from 2.5 per cent in the 1960s to 2.4 per cent in the 1980s, and the projected rate for the 1990s is 2.3 per cent (table P.2).

It should be noted, however, that the least developed countries tended to grow about 10 per cent less rapidly than the other comparable less developed countries in their respective regions during the first half of the 1980s. One of the important causes of this difference was their continuing higher levels of mortality. Thus, the least developed countries in aggregate have a rate of growth typical of populations that have just begun a demographic transition. Indeed, their current rate of population growth is quite similar to that of all developing countries during the later 1960s. Current mortality in the least developed countries (as measured by the expectation of life at birth) is about what it was for all developing countries in the early 1960s, while total fertility during the early 1980s was still higher than it had ever been (in modern history) for all developing countries on the average.

Faster growth in the 1990s is projected in most of the African LDCs and in about half of those in Asia. The growth rate in Afghanistan is projected to jump from 2.7 per cent in 1985-90 to 4.9 per cent in 1990-2000, as the country recovers from the long civil war. Conversely, Somalia is projected to have much slower growth in the 1990s than it had during the last fifteen years, as a result of instability in the region, but the growth rate is expected to still be between 2.4 and 3.0 per cent until sometime around the year 2015. The acceleration in the African LDCs, from 2.44 per cent in the 1960s to 2.82 per cent in the 1980s and 3.06 per cent in the 1990s, is virtually the same as for sub-Saharan Africa as a whole (from 2.60 to 3.13 to 3.25, respectively). (The African LDCs account for almost half of the population in sub-Saharan Africa). The projected acceleration in the Asian LDCs, from 2.38 per cent in the 1980s to 2.74 per cent in the 1990s, contrasts with a long-term gradual deceleration in South and East Asia as a whole (excluding China and Japan), and a sharp deceleration in West Asia from the 1980s to the 1990s (table P.2).

Table P.1. Total Population (millions)

| Country group | Number of countries | 1960 | 1970 | 1980 | 1990 | 2000 |
|---|---|---|---|---|---|---|
| Least developed | | | | | | |
| Africa | 27 | 102.3 | 130.2 | 169.6 | 224.0 | 302.7 |
| Asia | 8 | 101.6 | 129.0 | 165.3 | 209.1 | 274.0 |
| Haiti | | 3.7 | 4.5 | 5.4 | 6.5 | 7.8 |
| Total | 36 a/ | 207.6 | 263.7 | 340.3 | 439.6 | 584.6 |
| Developing countries (excluding China) | 117 | 1413.3 | 1809.4 | 2303.7 | 2930.2 | 3672.6 |
| China | | 657.5 | 830.7 | 996.1 | 1135.5 | 1285.9 |
| Total developing | 118 | 2070.7 | 2640.1 | 2399.8 | 4065.7 | 4958.5 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

Table P.2. Rates of Growth of Population

| Country group | Number of countries | 1960-1970 | 1970-1980 | 1980-1985 | 1985-1990 | 1980-1990 | 1990-2000 |
|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | |
| Africa | 27 | 2.44 | 2.68 | 2.77 | 2.88 | 2.82 | 3.06 |
| Asia | 8 | 2.42 | 2.51 | 2.18 | 2.58 | 2.38 | 2.74 |
| Haiti | | 2.05 | 1.87 | 1.81 | 1.89 | 1.85 | 1.88 |
| Total | 36 a/ | 2.42 | 2.58 | 2.47 | 2.72 | 2.59 | 2.89 |
| Developing countries (excluding China) | 117 | 2.50 | 2.44 | 2.47 | 2.39 | 2.43 | 2.28 |
| China | | 2.37 | 1.83 | 1.24 | 1.40 | 1.32 | 1.25 |
| Total developing | 118 | 2.46 | 2.26 | 2.11 | 2.11 | 2.11 | 2.00 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

Ih a recent survey of the 42 LDCs, 22 viewed their rate of population growth, which in most cases is above 2 per cent per year, as too high. These 22 countries account for nearly 2/3 of the population of the LDCs. In addition, 16 of the 22 countries have indicated interventions to lower their respective rates of growth. Some of the countries that report no direct intervention, such as the United Republic of Tanzania and Sierra Leone, are considering possible intervention policies.

## 2. Life expectancy and infant mortality

Life expectancy at birth in the least developed countries in 1960-1965 averaged 39 years for males and 40 years for females; in 1985-1990, it is estimated to be 48 years for males and 50 for females, or 8 to 9 years less than for the developing countries as a whole (excluding China) and 20 or more years below the levels in the developed countries and China. By the end of the century, it is expected to reach 52 years for males and 54 for females, remaining 8 to 9 years below the levels in the developing countries as a whole (tables P.3 and P.4). It should be noted, however, that very few (8 out of 35 least developed countries with 300,000 or more inhabitants in 1985) have estimates based on relatively reliable data on mortality. This lack of information seriously limits accurate economic and social analysis and the formulation of effective population policies.

Life expectancy at birth in every least developed country except Ethiopia is estimated to have increased from 1970-1975 to 1980-1985 and is expected to increase further for the next 15 years, but still be far from satisfactory. The average life expectancy at birth in the least developed countries is expected to reach only 53 years by the year 2000; just 4 of the countries (Botswana, Cape Verde, Lesotho and Myanmar - formerly Burma) are expected to reach a level of 60 years, the target set for that year by the international community at the International Conference on Population, 1984.

Table P.3. Female Life Expectancy at Birth

| Country group | Number of countries | 1980 Pop. (millions) | 1960-1965 | 1970-1975 | 1980-1985 | 1985-1990 | 1990-1995 | 2000-2005 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 40.0 | 43.8 | 46.5 | 48.5 | 50.5 | 54.9 |
| Asia | 8 | 165.3 | 40.1 | 44.9 | 49.2 | 51.4 | 53.5 | 57.9 |
| Haiti | | 5.4 | 44.9 | 50.0 | 54.4 | 56.4 | 58.3 | 62.2 |
| Total | 36 a/ | 340.3 | 40.1 | 44.4 | 47.9 | 49.9 | 51.9 | 56.2 |
| Developing countries (excluding China) | 117 | 2303.7 | 47.5 | 51.8 | 56.6 | 58.7 | 60.7 | 64.5 |
| China | | 996.1 | 50.4 | 63.9 | 68.9 | 70.9 | 72.6 | 75.1 |
| Developed market | 25 | 767.8 | 71.9 | 74.1 | 76.8 | 77.8 | 78.7 | 80.0 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 72.5 | 73.4 | 73.3 | 74.3 | 75.4 | 77.4 |
| Total developed | 33 | 1145.4 | 72.1 | 73.9 | 75.5 | 76.5 | 77.5 | 79.0 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

Table P.4. Male Life Expectancies at Birth

| Country group | Number of countries | 1980 Pop. (millions) | 1960-1965 | 1970-1975 | 1980-1985 | 1985-1990 | 1990-1995 | 2000-2005 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 37.0 | 40.7 | 43.4 | 45.3 | 47.3 | 51.6 |
| Asia | 8 | 165.3 | 40.6 | 45.2 | 49.1 | 51.1 | 53.0 | 57.1 |
| Haiti | | 5.4 | 42.3 | 47.1 | 51.2 | 53.1 | 54.9 | 58.5 |
| Total | 36 a/ | 340.3 | 38.8 | 42.9 | 46.1 | 48.0 | 49.9 | 53.9 |
| Developing countries (excluding China) | 117 | 2303.7 | 46.3 | 50.5 | 54.4 | 56.4 | 58.2 | 61.6 |
| China | | 996.1 | 48.7 | 62.5 | 66.7 | 68.0 | 69.2 | 71.4 |
| Developed market | 25 | 767.8 | 66.1 | 67.6 | 70.2 | 71.2 | 72.2 | 73.9 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 65.7 | 64.9 | 64.1 | 65.8 | 67.2 | 69.7 |
| Total developed | 33 | 1145.4 | 66.0 | 66.7 | 67.8 | 69.1 | 70.3 | 72.3 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

Infant mortality in the least developed countries was estimated to be 167 per thousand live births in 1960-1965. It appears to have declined to 133 per thousand in 1980-1985, despite difficult social and economic conditions, and is projected to decline to 104 during 1995-2000 (table P.5). Child mortality (the probability of dying before age 5) in the least developed countries is estimated to have declined from 248 per thousand during 1970-1975 to 220 during 1980-1985, and is projected to decline further to 167 per thousand during 1995-2000.

By the late 1980s, about half of the least developed countries still had an infant mortality rate higher than 125 per thousand live births; at least 6 countries (Afghanistan, Ethiopia, Gambia, Mali, Mozambique and Sierra Leone) had a rate greater than 150. Even by the year 2000, only three countries (Botswana, Cape Verde and Myanmar - formerly Burma) are projected to reach an infant mortality rate equal to or below 50 per thousand live births (the target set for that year by the (second) International Development Strategy, and only six countries are projected to achieve a child mortality rate equal to or below 120 per thousand live births.

Given the still high levels of mortality, 38 of the LDCs view current mortality levels as being unacceptable.

3. Fertility

There is a widening gap in fertility levels between the least developed countries and the other developing countries. Fertility 3/ in the developing countries as a whole (including China) declined from over 6 in 1960-1970 to 4.2 in 1980-1985. In the least developed countries fertility has remained around 6.5 over the last two decades, and it is projected to take at least 25 more years for them to reach the current average fertility level of the other developing countries.

Table P.5. Infant Mortality Rates, 1950-2005

| Country group | Number of countries | 1980 Pop. (millions) | 1950-1955 | 1960-1965 | 1970-1975 | 1980-1985 | 1990-1995 | 2000-2005 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 192 | 171 | 153 | 139 | 119 | 99 |
| Asia | 8 | 165.3 | 190 | 162 | 142 | 127 | 107 | 86 |
| Haiti | 1 | 5.4 | 220 | 188 | 155 | 128 | 106 | 85 |
| Total | 36 a/ | 340.3 | 192 | 167 | 148 | 133 | 114 | 94 |
| Developing countries (excluding China) | 117 | 2303.7 | 171 | 142 | 117 | 100 | 82 | 65 |
| China | | 996.1 | 195 | 121 | 61 | 39 | 27 | 19 |
| Developed market | 25 | 767.8 | 46 | 34 | 25 | 17 | 13 | 10 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 77 | 35 | 27 | 25 | 19 | 14 |
| Total developed | 33 | 1145.4 | 57 | 34 | 25 | 20 | 15 | 11 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

High fertility in the least developed countries is largely due to the combined effects of poor education, limited use of contraception, a relatively high economic value of children and high infant and child mortality. Knowledge and practice of contraception generally increase with the level of education, because more educated women desire smaller families and have more information and are more effective in the use of family planning.

Considerable improvements in literacy as well as school enrolment have been accomplished in the least developed countries. (See section B, below.) But the negative relationship between education and fertility does not appear until higher levels of education are reached (United Nations, 1987b; World Bank, 1984). The highest levels of fertility are often found among women with a few years education; better health care and shorter breast-feeding duration increases their fertility, more than offsetting later age of marriage or higher level of contraceptive use. Thus, in the transitional period from low to high education, fertility in the leastdeveloped countries may rise before it falls in the longer-term course of demographic transition.

With low rates of enrolment in school, the opportunity costs of raising children are generally low. Children can provide substantial agricultural labour at an early age, and they may be regarded as the most important source of parent support in old age in the absence of pensions or public social security. In Africa, women have a major role in agricultural production, in addition to their domestic roles as wife and mother, and make extensive use of child labour, being more motivated to have a larger family size rather than to practice more intensive agriculture systems. 4/

While national family planning programmes are in operation in a number of least developed countries, one can observe a wide gap between the knowledge and the use of contraception. In 14 least developed countries for which data on contraceptive use are available, at least half of the married women are familiar with some method in 8 countries. But less than 30 per cent of the married women in those countries currently practice contraception, and the average in all LDCs is estimated to be 10 per cent or less. One factor explaining this low percentage is the limited availability of contraceptives.

Another is the strong desire for large families; in the least developed countries in Africa, women typically report that they desire 6 to 9 children on average.

4. Age distribution

a. Child and old-age dependency

As implied by their high mortality and fertility, the least developed countries as a group have a very young age distribution. As of 1985, it was estimated that 45 per cent of the population were children aged 0 to 14 years, 52 per cent were between the ages of 15 and 65, and only 3 per cent were 65 or older. Thus, there were about 86 children and 6 elderly adults for each 100 people in the main working ages (tables P.6 and P.7). The total dependency ratio has risen steadily from 83.5 in 1960 to 92 in 1985, which is much higher than the average of 78 for all developing countries (excluding China), 54 in China and 51 in the developed countries (table P.8). The age distribution in the least developed countries is not very favourable to economic and social development. As in many developing countries, the somewhat older children are often a substancial part of the labour force. But to the extent that formal schooling becomes increasingly necessary, the high proportion of children places heavy demands on the available educational resources.

The child dependency ratio (children under 15 as percentage of people aged 15-64) in the least developed countries of Africa is about 90, compared with 78 in the LDCs in Asia. The ratio is expected to fall sharply in the Asian LDCs to 71 in 2000, after rising from 74 in 1960 to a peak of 84 in 1980. But in the African LDCs, only a slight decline is projected, from an average of 90 in 1985-90 to 89 in 2000, as fertility and birth rates remain high. Moreover, the ratio is projected to continue to rise in the 1990s in all but five of the African least developed countries.

The old-age dependency ratio (people 65 and over as a percentage of those aged 15-64) will decline slightly in the LDCs - from 6.1 in 1985 to 5.8 in 1990 and 5.6 in 2000, reflecting the continuing high fertility and mortality

Table P.6. Child Dependency Ratio

| Country group | Number of countries | 1980 Pop. (millions) | 1960 | 1970 | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 81.5 | 84.4 | 86.8 | 90.0 | 90.2 | 89.1 |
| Asia | 8 | 165.3 | 73.9 | 82.5 | 83.6 | 82.5 | 77.7 | 70.5 |
| Haiti | | 5.4 | 71.6 | 77.1 | 75.5 | 71.7 | 68.8 | 64.9 |
| Total | 36 a/ | 340.7 | 77.5 | 83.3 | 85.1 | 86.0 | 83.7 | 79.6 |
| Developing countries (excluding China) | 117 | 2303.7 | 75.6 | 79.2 | 74.0 | 71.4 | 68.6 | 63.2 |
| China | | 996.1 | 69.1 | 71.0 | 59.3 | 45.8 | 38.6 | 38.2 |
| Developed market | 25 | 767.8 | 44.9 | 41.8 | 35.3 | 32.3 | 30.5 | 29.5 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 47.5 | 43.3 | 37.8 | 38.0 | 38.0 | 34.7 |
| Total developed | 33 | 1145.4 | 45.8 | 42.3 | 36.1 | 34.1 | 32.9 | 31.2 |

Table P.7. Old-age Dependency Ratio

| Country Group | Number of countries | 1980 Pop. (millions) | 1960 | 1970 | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 5.7 | 5.3 | 5.4 | 6.1 | 5.8 | 5.6 |
| Asia | 8 | 165.3 | 6.2 | 6.3 | 6.4 | 6.0 | 5.8 | 5.7 |
| Haiti | | 5.4 | 7.1 | 7.0 | 6.9 | 6.8 | 6.8 | 6.8 |
| Total | 36 a/ | 340.3 | 6.0 | 5.8 | 5.9 | 6.1 | 5.8 | 5.7 |
| Developing countries (excluding China) | 117 | 2303.7 | 6.2 | 6.5 | 6.8 | 6.8 | 6.9 | 7.5 |
| China | | 996.1 | 8.6 | 7.7 | 7.9 | 8.1 | 8.6 | 10.5 |
| Developed market | 25 | 767.8 | 14.4 | 16.0 | 17.9 | 18.1 | 19.2 | 21.2 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 11.5 | 12.9 | 16.5 | 15.1 | 15.4 | 18.3 |
| Total developed | 33 | 1145.4 | 13.4 | 15.0 | 17.5 | 17.1 | 17.9 | 20.2 |

Table P.8. Total Dependency Ratio

| Country Group | Number of countries | 1980 Pop. (millions) | 1960 | 1970 | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|---|---|---|---|
| Least developed | | | | | | | | |
| Africa | 27 | 169.6 | 87.2 | 89.7 | 92.2 | 96.1 | 96.0 | 70.6 |
| Asia | 8 | 165.3 | 80.1 | 88.8 | 90.0 | 88.5 | 83.6 | 76.2 |
| Haiti | | 5.4 | 78.7 | 84.0 | 82.4 | 78.5 | 75.6 | 71.7 |
| Total | 36 a/ | 340.3 | 83.5 | 89.2 | 91.0 | 92.1 | 89.5 | 85.3 |
| Developing countries (excluding China) | 117 | 2303.7 | 81.7 | 85.7 | 80.8 | 78.2 | 75.5 | 70.6 |
| China | | 996.1 | 77.7 | 78.7 | 67.2 | 53.9 | 47.2 | 48.6 |
| Developed market | 25 | 767.8 | 59.4 | 57.8 | 53.2 | 50.4 | 49.6 | 50.7 |
| E. Europe & U.S.S.R. | 8 | 377.6 | 59.0 | 56.2 | 54.3 | 53.1 | 53.4 | 53.0 |
| Total developed | 33 | 1145.4 | 59.2 | 57.3 | 53.6 | 51.3 | 50.8 | 51.4 |

a/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population if 579,000 in 1980.

in these populations. This contrasts with a projected increase in the developing countries as a whole, from 6.8 in 1983 to 7.5 in 2000 (table P.7).

Programmes to provide pension and other social security benefits for older persons in 26 of the least developed countries are very limited in coverage, being restricted to public employees plus, in 21 of these 26 countries, to persons with formal paid employment. With very large proportions of the population dependent on small-holder agriculture and on self employment, organized pensions and other social security systems do not make a major contribution to most people's lives in the LDCs. This situation tends to maintain the high fertility rates in the LDCs.

b. Women aged 15-49

A very important aspect of population structure is the proportion of women in the child-bearing years, operationally defined as 15 to 49. For the least developed countries in aggregate, the proportion has been quite stable and comparatively high during recent years, close to 22.5 per cent of the total population, with little variation between countries. It is projected that the combined effects of the current age distribution and the most likely future courses of fertility and mortality will lead to higher proportions of women in this age group during the 1990s and beyond, as the number of women aged 15 to 49 will increase more rapidly than the total population. From 1985 to 2025, it is projected that the total population of the LDCs will increase to about 2.6 times their present size, while the number of women in the child-bearing ages will triple. In Africa, the total population is projected to triple while the number of these women will increase to nearly three and a half times the present size.

If fertility remains high, or if there is a leveling off in any future declines in fertility, the numbers of children born will be very large indeed. The growing numbers of women in this age group indicate the increasing need for information and means to control fertility in these countries.

5. Urban growth

As of 1985, the least developed countries were stilll predominantly rural; only 17 per cent of their total population lived in an urban place, compared with 32 per cent in the less developed regions as a whole. In 1970, only 11 per cent had been living in an urban place (using each country's own definition of "urban"). By the year 2000, one fourth of the total population of the least developed countries is expected to be urban — the level that had already been attained by the developing countries as a whole in 1970 (26 per cent).

The urban populations of the least developed countries are growing substantially more rapidly than the 3.6 per cent annual growth of the urban population of all countries in the less developed regions. The urban populations of the African least developed countries in aggregate are growing at 6 per cent per year while those of the other developing regions are growing at 4.1 per cent. Given the poor outlook for their economies, these high rates of growth imply increasing needs for urban employment, housing and services that will be difficult to provide.

Only 5 per cent of the Governments of least developed countries consider their patterns of population distribution to be satisfactory, and 60 per cent have formulated explicit policies to influence population distribution and migration trends, including such strategies as slowing primate city (or metropolitan) growth, promoting small towns and intermediate cities and promoting rural development to retain or attract rural population. A number of countries in South-eastern Asia with centrally planned economies continue to limit population mobility by means of direct controls on individuals.

6. International migration

Among the least developed countries, refugee movements are the main type of international migration, although several countries also are sources of migrant workers. Some of the least developed countries are both origin and

destination of refugee movements. In general, the least developed countries tend to have net emigration, because of employment opportunities abroad, local conflicts or natural disasters. The number of refugees originating from or hosted by least developed countries far exceeds the number of migrant workers or permanent emigrants. These refugees are a major source of concern, particularly because of their possible impact on development prospects of the host countries.

Most of the least developed countries involved in refugee flows are located in Africa, but Asia contains the highest number of refugees in the world - 6.3 million in early 1987. Since 1976 increasing numbers of nationals from Bangladesh have been departing to work temporarily in the oil-rich countries of Western Asia; during 1985-1987 an annual average of 73,000 workers left Bangladesh to work abroad. Although this number is a small portion of the population, their remittances constitute an important source of foreign exchange earnings for the country. In 1985, an annual average of 18,000 workers from Botswana and 107,000 from Lesotho were employed in South Africa in the gold and coal mines. Although recent data are lacking, Ghana has probably become a country of net emigration, but Côte d'Ivoire has remained an important attraction pole for the citizens of the least developed countries in West Africa. Nigeria also attracted large numbers of undocumented migrants, many of whom were expelled in 1983 and again in 1985.

A number of Governments of least developed countries have adopted policies to halt illegal migration. In the ESCAP region, the Governments of Bangladesh and Nepal have done so. Whereas only one Government of a least developed country (Somalia) reported that it desired to halt the influx of refugees, other were willing to maintain or reduce the flow. With respect to regular documented immigration into the least developed countries, nearly 20 per cent of Governments (8 of 42) consider it to be too high, and 17 per cent have adopted policies designed to decrease it.

Regarding emigration, more than one-fifth of the Governments (9 of 42) consider it to be too high, and one-fourth (11 of 42) have adopted policies to reduce it. A number of Governments of least developed countries are encouraging return migration by skilled nationals.

Overall, the LDCs have very high mortality, fertility, and population growth. In analyzing population conditions in the least developed countries, however, it must be noted that the quality and quantity of data remain seriously deficient. The risk that defects in the data will lead to misguided policies remains very serious, and improvement of the demographic data for those countries should be of the highest priority.

Table P.9 Total population (in millions) and average annual growth rates (percentage) by decade, 1960-2000

| Country groups b/ | 1960 | 1960-1970 | 1970 | 1970-1980 | 1980 | 1980-1990 | 1990 | 1990-2000 | 2000 |
|---|---|---|---|---|---|---|---|---|---|
| Developing countries | | | | | | | | | |
| North Africa | 54 | 2.53 | 69 | 2.55 | 89 | 2.80 | 117 | 2.32 | 148 |
| Sub-Saharan Africa | 210 | 2.60 | 271 | 2.98 | 364 | 3.13 | 495 | 3.25 | 681 |
| South and East Asia | 794 | 2.41 | 1`008 | 2.27 | 1`262 | 2.23 | 1573 | 2.05 | 1`928 |
| Western Asia | 46 | 3.23 | 63 | 3.41 | 88 | 3.67 | 126 | 3.15 | 171 |
| Mediterranean | 47 | 1.92 | 57 | 1.81 | 68 | 1.75 | 81 | 1.43 | 93 |
| Western hemisphere | 217 | 2.74 | 284 | 2.41 | 361 | 2.16 | 447 | 1.88 | 538 |
| Subtotal, developing countries | 1`367 | 2.51 | 1`752 | 2.45 | 2`230 | 2.44 | 2`838 | 2.29 | 3`558 |
| China and Asian planned economies | 704 | 2.36 | 889 | 1.87 | 1`070 | 1.39 | 1`229 | 1.32 | 1`400 |
| Developed market economies | 633 | 1.10 | 705 | 0.85 | 768 | 0.60 | 816 | 0.49 | 857 |
| Eastern Europe and USSR | 313 | 1.08 | 348 | 0.81 | 378 | 0.70 | 495 | 0.57 | 429 |
| Total, 151 countries | 3`016 | 2.05 | 3`694 | 1.87 | 4`445 | 1.75 | 5`286 | 1.68 | 6`244 |
| World total a/ | 3019 | | 3698 | | 4450 | | 5292 | | 6251 |
| Least developed countries c/ | 208 | 2.42 | 264 | 2.58 | 340 | 2.59 | 440 | 2.89 | 585 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat. Calculated from country data in World Population Prospects - 1988, United Nations publication, Sales No. E.88.XIII.7. The projections for 1990 and 2000 are based on the "medium variant" projection for each country.

a/ Includes a number of small countries and territories, which had a combined population of about 5 million in 1980 and are projected to have 7 million in the year 2000.

b/ Definitions of the country groups are given in the "Explanatory notes", preceding the Introduction.

c/ Includes the 36 LDCs with populations over 200,000 in 1980; the other 6 LDCs had a combined population of 579,000 in 1980.

## Notes to Section A, Population

1/ For a more detailed survey of the population situation in the LDCs, see World Population Monitoring 1989, United Nation publication (Sales No. E.89.XIII.12, forthcoming), Part One.

2/ As prepared by the United Nations Population Division, in World Population Prospects 1988, Part Two, Sales No. E. 88.XIII.7.

3/ The estimated total number of live births in a woman's lifetime, given current fertility rates at each age.

4/ Boserup, E. (1985). (See Bibliography, next page.)

## Bibliography on Population

Afolayan, A. A. (1988). Immigration and expulsion of ECOWAS aliens in Nigeria. International Migration Review, vol. XXII, No. 1, pp. 4-21.

Boserup, E. (1985). Economic and demographic interrelationships in sub-Saharan Africa. Population and Development Review, vol. 11, No. 3, (September), pp. 383-397.

Frank, O. (1983). Infertility in sub-Saharan Africa: estimates and implications. Population and Development Review, vol. 9, No. 1 (March), pp. 137-145.

Kritz, Mary M. (1981). International migration patterns in the Caribbean Basin: an overview. In Kritz and others, eds., Global Trends in Migration: Theory and Research on International Population Movements. New York: Center for Migration Studies, pp. 208-233.

Nag, M. and others (1977). Economic value of children in two peasant societies. In International Population Conference: Mexico 1977. Liège: International Union for the Scientific Study of Population, pp. 123-139.

United Nations Conference on Trade and Development (1987a). The Least Developed Countries 1987 Report. Sales No. E.87.11.D.12.

United Nations, ECA (1971). Report of the African Population Conference, Accra, Ghana (Addis Ababa).

_____, ECA (1984). Report of the Second African Population Conference, Arusha, United Republic of Tanzania (Addis Ababa).

United Nations (1985). The Mexico City Conference: The Debate on the Review and Appraisal of the World Population Plan of Action.

_____ (1987). Fertility Behaviour in the Context of Development: Evidence from the World Fertility Survey. Sales No. E/F.87.XII.5.

_____ (1988). World Population Prospects, 1988. Sales No. E.88.XIII.7.

_____ (1989). Recent Levels and Trends of Contraceptive Use as Assessed in 1988. Sales No. E.89.XIII.4.

United States, Department of Health and Human Services (1986). Social Security Around the World, 1985 (Washington, D.C.).

_____, Department of Justice (1987). 1986 Statistical Yearbook of the Immigration and Naturalization Service (Washington, D.C., October).

World Bank (1984). Population Change and Economic Development. New York, Oxford University Press.

World Health Organization (1986). Evaluation of the Strategy for Health for All by the Year 2000. Seventh Report on the World Health Situation, vol. 3 (Washington, D.C.), vol. 4 (New Delhi) and vol. 7 (Manila).

_____ (1987). Evaluation of the Strategy for Health for All by the Year 2000. Seventh Report on the World Health Situation, vol. 2 (Brazzaville) and vol. 6 (Alexandria, Virginia, USA).

_____ (1988). Epidemiological Bulletin, No. 1 (January-March).

## B. Education

Education, especially primary schooling for literacy, is both a goal of development and a means for achieving the inter-related goals of better health, higher labour productivity and rapid economic growth, as well as social integration More advanced education is increasingly needed to understand and participate in the technological and administrative processes of the modern global economy. But most governments have not given education top priority as a development objective.1/

The average adult literacy rate in the least developed countries was only 35 per cent in 1985, compared to 61 per cent in the developing countries as a whole, including China. The literacy rate in the LDCs is projected by UNESCO to increase gradually, to 40 per cent in 1990 and to 49 per cent by the year 2000. 2/ The female literacy rate was much lower than the male rate in 1985 in all of the least developed countries, except Lesotho and Botswana. 3/ The primary school gross enrolment rate in the least developed countries as a whole was 70 per cent for males in 1985, but the rate for females was only 52 per cent (table E.2, below).

### 1. Returns on investment

The private rate of return to the investment cost of all levels of education is generally high, especially in developing countries, reflecting in part government subsidization of education. This has stimulated the demand for access to education. The social rate of return to education, although consistently lower than the corresponding private return, is generally no less than average rates of return on fixed capital investments; using this criterion, developing countries under-invest in education.

But estimates of both private and social rates of return, most of which are based on cross-section estimates of private earnings streams, have to be treated with caution. Earnings differences between people with different

educational levels may be attributable to other individual characteristics, such as intelligence, determination and social or political status, rather than or in addition to their level of education. On the other hand, such estimates may understate the external effects of education such as beneficial effects of educated people on the productivity of those around them or on the health of their families, and the power of education to enrich people's lives.

Country studies carried out mostly in the 1970s and earlier suggest that the rate of return on primary education in the developing countries has been higher than the return to second-level and third-level education, at least in the past 3A/. However, a recent detailed analysis 4/ of an LDC (Tanzania) and a neighboring country (Kenya) suggests that, as average education levels increase over time, the marginal rates of return to the different levels (i.e., the lifetime return for new entrants into the labour force) tend to converge rapidly towards the narrower and lower range observed for the second and third levels in the developed countries. Two or three decades ago, workers with only a primary education were still quite scarce in many developing countries, and were able to obtain a large share of the relatively high-paying jobs in the industrial and government sectors. By now, however, most of these jobs would require replacement workers to have second-level education, or even third-level.

The social return to expansion of primary education in agrarian societies depends largely on its effects on the productivity of peasant farmers. The evidence suggests that this in turn depends on whether farmers are operating in a traditional or a modernizing environment - that is, one in which change is rapid. Education assists farmers to obtain and evaluate information about improved technology and new economic opportunities, and thus to innovate. The level of education required depends on the levels of technology currently in use and potentially suitable. Education being complementary to other inputs, its value cannot be assessed in isolation. It depends on the degree of access to credit, extension services, new seeds and other inputs. The greatest impact on rural development can thus be made where education is part of a package of measures.4A/

## 2. Literacy, school enrolment and per capita income

Illiteracy is largely a result of inadequate enrolment in school, as well as the absence of large-scale adult literacy programmes. In 1985 about 135 million children aged 6-11 were not enrolled in school in the developing countries (including China); 35 million of these children were in the LDCs, where the number is expected to increase to 39 million by the year 2000. For the age-group 12-17, the number of out-of-school in 1985 was 38 million in the LDCs and almost 290 million in all of the developing countries. By the year 2000, however, the number is expected to increase to 48 million in the least developed countries, while falling in the other developing countries.

Children may be out of school (not enrolled) because there are not enough places in nearby schools nor adequate transport to more distant ones, especially in rural areas, or their families cannot afford the fees or the foregone income that the children can earn. Some traditional cultures still discourage school attendance, especially by girls. Drop-outs include children rejected by the school as failures or withdrawn by their parents, and children who drift from absence into drop-out. Some children do not go beyond primary school because their parents regard basic literacy and numeracy as sufficient school-based competences. For others, places in second level education are not available; this group in many countries is growing rapidly.

Poorer countries generally have lower rates of school enrolment and literacy. Public funds to provide teachers and schools are lacking, and many children drop out early, usually to work in low-skilled jobs, where they tend to lose whatever literacy they have attained, because it is not used in their work or at home or reinforced by any kind of literacy maintenance programme.

Literacy rates have risen considerably in most of the developing countries in recent decades. By 1985 the higher income developing regions had reached literacy rates of 85 per cent or more for adult males (aged 15 and over) and 70 per cent or more for adult females. But in the lower income regions less than 65 per cent of the males and less than 40 per cent of the females were literate. In 28 least developed countries for which data were

available, only 47 per cent of males and 27 per cent of females were literate (see table E.1). The LDCs in Africa made dramatic progress from 1970 to 1985 - the female literacy rate tripled and the male literacy rate doubled. Progress in the Asian LDCs was slower, and less than that in the developing countries as a whole.

Table E.1. Adult literacy rates, a/ 1970-1985,
(literates as pecentage of population aged 15 and over)

| Country group b/ | Number of countries | FEMALE 1970 | FEMALE 1980 | FEMALE 1985 | MALE 1970 | MALE 1980 | MALE 1985 |
|---|---|---|---|---|---|---|---|
| Developing countries | | | | | | | |
| North Africa | 5 | 16 | 27 | 31 | 44 | 54 | 57 |
| sub-Saharan Africa | 41 | 15 | 25 | 37 | 34 | 46 | 57 |
| South and East Asia | | | | | | | |
| South Asia | 6 | 18 | 25 | 28 | 45 | 52 | 54 |
| East Asia NIEs | 3 | 78 | 85 | 89 | 93 | 95 | 97 |
| Others | 7 | 53 | 66 | 72 | 74 | 81 | 85 |
| West Asia | 9 | 18 | 31 | 39 | 42 | 56 | 63 |
| Mediterranean | 4 | 52 | 63 | 71 | 79 | 87 | 90 |
| Western hemisphere | 27 | 70 | 78 | 82 | 76 | 82 | 86 |
| Total, developing countries | 102 | 33 | 42 | 47 | 54 | 62 | 67 |
| China and Asian planned economies | 3 | c/ | 52 | 57 | c/ | 80 | 83 |
| Least developed countries | 29 d/ | 9 | 16 | 26 | 27 | 36 | 47 |
| Africa | 23 | 10 | 16 | 32 | 25 | 36 | 51 |
| Asia | 5 | 9 | 14 | 19 | 30 | 37 | 42 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country rates in UNESCO, "The Current Literacy Situation in the World", ST-85/WS-9, Paris, July 1985, and Statistical Yearbook 1987 and earlier editions.

a/ Country group rates are weighted by the population aged 15 and over in the individual countries.

b/ Definitions of the country groups are given in the "Explanatory notes", in Annex I.

c/ Data not available

d/ Includes Haiti

Literacy rates were higher for the 15-24 age group (36 per cent for females and 58 per cent for males in 1985 5/) but still low enough to indicate that adult illiteracy is likely to remain a major problem in the LDCs in the 1990s and beyond. In Bangladesh, only 20 per cent of the pupils entering primary education emerge literate. 6/

Where universal primary education was started several decades ago in low-income countries, as in Sri Lanka, literacy rates are high, but higher per capita income levels in other countries have allowed greater expenditures on education and consequent increases in enrolment and literacy rates. Many of the higher-income developing countries reached gross enrolment rates 7/ of 100 per cent for primary school during the 1970s, and several regions have had gross rates above 100 per cent for males and 90 per cent for females since 1980 or before (see table E.2).

Table E.2. First-level gross enrolment rates[a/] 1970-2000, percentage

| Country group | Number of countries | FEMALE 1970 | 1980 | 1985 | 1990 | 2000 | MALE 1970 | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Developing countries | | | | | | | | | | | |
| North Africa | 4 | 54 | 70 | 77 | 81 | 93 | 86 | 99 | 99 | 101 | 102 |
| sub-Saharan Africa | 41 | 36 | 67 | 65 | 68 | 75 | 56 | 88 | 83 | 83 | 89 |
| South Asia | 5 | 50 | 61 | 71 | 78 | 93 | 84 | 91 | 100 | 99 | 100 |
| East Asia | 10 | 84 | 101 | 106 | 106 | 105 | 93 | 108 | 110 | 109 | 105 |
| West Asia | 5 | 49 | 78 | 92 | 99 | 104 | 90 | 106 | 109 | 109 | 107 |
| Mediterranean | 4 | 97 | 92 | 107 | 107 | 109 | 119 | 102 | 112 | 112 | 109 |
| Western hemisphere | 24 | 92 | 105 | 106 | 107 | 111 | 95 | 107 | 110 | 111 | 113 |
| Total, developing countries | 93 | 62 | 77 | 82 | 86 | 94 | 84 | 97 | 101 | 100 | 101 |
| China | 1 | 81 | 103 | 114 | 122 | 119 | 97 | 121 | 132 | 136 | 127 |
| Least developed countries | 30 b/ | 33 | 50 | 52 | 56 | 64 | 55 | 73 | 70 | 73 | 79 |
| Africa | 26 | 24 | 44 | 44 | 48 | 56 | 40 | 63 | 59 | 63 | 70 |
| Asia | 3 | 43 | 56 | 61 | 66 | 76 | 73 | 85 | 81 | 84 | 92 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data for the most recent available year around 1985, and for the nearest available year to 1970 and 1980, from UNESCO, Statistical Yearbook 1988, Table 3.2, and earlier volumes, and data bank for forthcoming 1989 Yearbook. The projections for 1990 and 2000 for the developing countries are based on the baseline scenario for country GDP growth (see text); those for China were prepared by UNESCO (November 1989).

a/ Country group rates are averages of individual countries rates weighted by the population aged 6-11.

b/ Includes Haiti

In lower-income regions, dramatic increases in primary enrolment were achieved in the 1970s. But from 1980 to 1985 the gross enrolment rate for boys fell in the LDCs; the rate for girls continued to increase in the Asian LDCs, but stagnated (remained constant) in the African LDCs.

3. Second-level and third-level enrolment

The number of students enrolled in all types of second-level education, in relation to the official second-level school-age population (typically ages 12 to 17), increased from about 35 per cent for the world as a whole in 1970 to 45 per cent in 1985, responding to the high rates of private and social return noted above. Second-level gross enrolment rates increased by at least 10 percentage points in most regions from 1970 to 1985, for males and for females. In the LDCs, however, the second level gross enrolment rate reached only 10 per cent for females and 20 per cent for males in 1985, compared with 5.5 and 15 per cent, respectively, in 1970 (table E.3). A review of enrolment trends and education policies in the least developed countries concluded that "it is clear that, given their other priorities, almost no LDC can afford to press ahead with substantial increases in enrolment at the secondary and tertiary levels of education. (For example) in ... the policy (of) the Central African Republic ... in secondary education the essential requirement is to restore its quality and to begin by limiting enrolment (and) Samoa ... stated that the existing proportion of secondary school places to primary school leavers would be maintained ...". 8/

The third-level gross enrolment rate (defined as gross enrolment divided by population aged 20 to 24) increased from 9.6 per cent to 12.9 per cent in the world as a whole from 1970 to 1985. In the LDCs, despite relatively large increases since 1970, the third-level enrolment rates remain extremely low for both males and females (table E.4), suggesting that they will continue to lack enough people with the higher skills needed to absorb new technologies from the developed regions and to generate appropriate new ones. (To some extent, low domestic enrolment is supplemented by enrolment in foreign universities, but this is costly—see below.)

Table E.3. Second-level gross enrolment rates[a/], 1970-2000, percentage

| Country group | Number of countries | FEMALE 1970 | FEMALE 1980 | FEMALE 1985 | FEMALE 1990 | FEMALE 2000 | MALE 1970 | MALE 1980 | MALE 1985 | MALE 1990 | MALE 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Developing countries | | | | | | | | | | | |
| North Africa | 4 | 15 | 31 | 43 | 45 | 52 | 35 | 50 | 62 | 64 | 70 |
| sub-Saharan Africa | 41 | 4 | 11 | 13 | 13 | 15 | 9 | 21 | 27 | 26 | 27 |
| South Asia | 5 | 14 | 20 | 24 | 27 | 34 | 34 | 37 | 44 | 47 | 53 |
| East Asia NIEs | 3 | 33 | 70 | 85 | 94 | 99 | 49 | 78 | 89 | 97 | 98 |
| Other East Asia | 7 | 20 | 32 | 38 | 42 | 51 | 26 | 38 | 44 | 47 | 55 |
| West Asia | 5 | 17 | 34 | 39 | 38 | 42 | 37 | 56 | 59 | 57 | 60 |
| Mediterranean | 3 | 29 | 39 | 42 | 48 | 54 | 48 | 55 | 59 | 66 | 71 |
| Western hemisphere | 24 | 26 | 42 | 47 | 48 | 51 | 28 | 40 | 45 | 46 | 48 |
| Total, developing countries | 92 | 16 | 26 | 31 | 33 | 37 | 29 | 38 | 44 | 45 | 49 |
| China | 1 | 18 | 37 | 32 | 47 | 70 | 30 | 54 | 45 | 61 | 75 |
| Developed market economies | 23 | 80 | 88 | 94 | 96 | 98 | 82 | 86 | 92 | 95 | 97 |
| USSR and Eastern Europe | 6 | 59 | 73 | 76 | 79 | 85 | 59 | 71 | 71 | 73 | 79 |
| Total | 122 | 28 | 39 | 40 | 44 | 49 | 39 | 50 | 51 | 55 | 59 |
| Least developed countries | 30 b/ | 5.5 | 8 | 10 | 12 | 14 | 15 | 18 | 20 | 21 | 23 |
| Africa | 26 | 2.3 | 5.5 | 8 | 9 | 10 | 6 | 12 | 14 | 15 | 16 |
| Asia | 3 | 10 | 12 | 13 | 15 | 20 | 27 | 26 | 27 | 29 | 33 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data for the most recent available year around 1985, and for the nearest available year to 1970 and 1980, from UNESCO, Statistical Yearbook 1988, Table 3.2, and earlier volumes, and data bank for forthcoming 1989 Yearbook. The projections for 1990 and 2000 are based on the baseline scenario for country GDP growth (see text), except those for China, which were prepared by UNESCO (November 1989).

a/ Country group rates are averages of individual country rates weighted by the population aged 12-17.

b/ Includes Haiti

Table E.4. Third-level gross enrolment rates, a/ 1970-2000, percentage

| Country group | Number of countries | FEMALE 1970 | 1980 | 1985 | 1990 | 2000 | MALE 1970 | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Developing countries | | | | | | | | | | | |
| North Africa | 5 | 2.7 | 7.1 | 8.4 | 8.9 | 10.9 | 8.2 | 16.0 | 18.6 | 18.9 | 21.0 |
| Sub-Saharan Africa | 40 | 0.1 | 0.6 | 0.8 | 1.1 | 1.7 | 0.9 | 2.2 | 2.7 | 2.9 | 3.3 |
| South Asia | 5 | 2.6 | 3.9 | 4.6 | 5.8 | 8.0 | 8.1 | 10.7 | 11.1 | 12.3 | 14.6 |
| East Asia NIEs | 3 | 4.0 | 7.8 | 19.0 | 21.9 | 26.3 | 11.2 | 21.2 | 41.2 | 44.8 | 49.6 |
| Other East Asia | 7 | 4.9 | 8.5 | 12.5 | 13.4 | 16.2 | 5.7 | 10.4 | 14.9 | 16.2 | 18.8 |
| Western Asia | 5 | 1.9 | 4.7 | 6.1 | 6.2 | 8.0 | 6.0 | 9.8 | 11.2 | 10.8 | 12.4 |
| Mediterranean | 3 | 6.3 | 8.5 | 9.4 | 10.9 | 12.8 | 12.7 | 13.4 | 14.5 | 15.9 | 17.9 |
| Western hemisphere | 24 | 4.8 | 12.1 | 14.5 | 15.0 | 16.4 | 8.8 | 16.2 | 17.7 | 18.3 | 19.7 |
| Total, developing countries | 92 | 3.0 | 5.8 | 7.5 | 8.2 | 9.7 | 6.9 | 10.8 | 12.6 | 13.3 | 14.7 |
| China | 1 | 0.1 | 0.6 | 1.0 | 1.6 b/ | 3.4b/ | 0.1 | 2.0 | 2.2 | 3.4b/ | 6.1b/ |
| Developed market economies | 24 | 20.5 | 35.4 | 38.3 | 38.2 | 41.2 | 32.5 | 39.3 | 39.4 | 39.9 | 42.6 |
| USSR and Eastern Europe | 7 | 21.5 | 21.0 | 21.2 | 21.7 | 23.6 | 22.7 | 19.5 | 19.8 | 20.4 | 22.4 |
| Total | 124 | 7.5 | 10.8 | 11.4 | 11.1 | 12.7 | 11.6 | 14.0 | 14.4 | 14.4 | 16.4 |
| Least developed countries | 30 c/ | 0.6 | 1.1 | 1.5 | 2.0 | 2.9 | 1.7 | 3.0 | 4.2 | 4.6 | 5.5 |
| Africa | 26 | 0.1 | 0.3 | 0.5 | 0.9 | 1.4 | 0.6 | 1.2 | 1.5 | 1.8 | 2.3 |
| Asia | 3 | 1.3 | 2.0 | 2.8 | 3.5 | 4.9 | 3.2 | 5.1 | 7.2 | 7.9 | 9.6 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data the most recent available year around 1985, and for the nearest available year to 1970 and 1980, from UNESCO, Statistical Yearbook 1988, Table 3.2, and earlier volumes, and data bank for forthcoming 1989 Yearbook. The projections for 1990 and 2000 are based on the baseline scenario for country GDP growth (see text), except those for China, which were prepared by UNESCO (November 1989).

a/ Country group rates are averages of individual country rates weighted by the population aged 20-24, except as otherwise noted.

b/ Ages 17-21. Source: UNESCO, November, 1989.

c/ Includes Haiti

4. Enrolment in private schools

Children in private schools (defined as schools not operated by a public authority) accounted for about 7 per cent of primary enrolment and 12 per cent of secondary general enrolment during 1975-1985, in over 130 countries and territories with about 75 per cent of the world's total enrolment at these levels. The private share of primary enrolment was about the same in the developed market economies and the developing countries (11.4 versus 9.6 per cent) and zero in all of the planned economies. In the African and Asian groups of LDCs the private share of enrolment was less than 8 per cent, but in the Haiti it was exceptionally high: 58 per cent (table E.5A). At the secondary level the private share in the developing countries was about 29 per cent, far above the 14 per cent share in the developed countries, though it has declined from about 35 per cent in the developing countries in 1975. 2/ Among the LDCs, the private share of secondary enroment averaged only 16 per cent in Africa; but it was 49 per cent in Asia and 87 per cent in Haiti.

Private schooling has maintained a significant share of total enrolment for several reasons. In some countries it is a response to excess demand, as tight budgetary constrains have prevented governments from providing enough schools or teachers. With limited public provision, those who can afford it purchase education for their children. In some developed countries, strong demand for vocational training has led to initiatives by private providers. Various social groups wish to use education to maintain their sub-culture. Other causes of expansion of the private sector in some countries are policies favouring non-government schools in order to allow parents to exercise greater choice in the selection of schools for their children, or beliefs that a mixed economy of public and private schools, or even private schools alone, would be more effective (and less costly) than a public system.

Table E.5A

Percentage of Students Enrolled in Private Education
1985-86 or latest available data a/

| Country group | First Level | | Second Level | |
|---|---|---|---|---|
| Least developed | | | | |
| Africa | 7.5 | (24) | 16.1 | (23) |
| Asia | 5.7 | (9) | 49.3 | (9) |
| Haiti | 58.0 | | 87.0 | |
| Total | 7.7 | (34) | 39.3 | (33) |
| Developing, excluding China | 9.8 | (116) | 25.4 | (112) |
| China | 0.0 | | 0.0 | |
| Total developing | 5.5 | (117) | 14.7 | (113) |

a/ The number of countries for which the data are available is given in parentheses.

Source: United Nations Department of International Economic and Social Affairs, based on country data in UNESCO, "Development of Private Enrolment First and Second Level Education, 1975-1985", CSR_E_57, Paris, May 1989.

5. Expenditure on education

In most countries, education is financed and provided predominantly by government agencies. In recent years, adverse macroeconomic conditions and an intensified competition for public funds have reduced the ability of many governments to finance continued expansion of education, while the willingness of households to pay direct fees for education has not been widely tapped. Despite the recent difficulties, many developing countries have managed to sustain the increase in enrolment.

In the world as a whole (124 countries), public expenditure on education represented 5.6 per cent of GNP in 1980 and 1985, compared to 5.1 per cent in 1970. The percentage spent by the developing countries rose from 3.6 per cent in 1970 to 3.9 per cent in 1980 and to 4.0 per cent in 1985. In the least developed countries, it fluctuated from 2.9 per cent in 1970 to 2.6 per cent in 1980 and 2.8 per cent in 1985. The African LDCs spent 3.3 per cent in 1985, down slightly from 3.6 per cent in 1970, while the percentage spent by the Asian LDCs increased from 1.5 to 2.0 per cent (see table E.5). Of these totals, capital expenditure was about 1 per cent of GNP in the developed countries and about 0.4 per cent in the developing countries.

Absolute reductions in per capita spending from 1980 to 1985 occurred in a number of developing countries, including some of the LDCs. In the African LDCs as a whole, it stagnated at $10 per capita; in the Asian LDCs it increased from $3 to $4 (table E.6). The higher spending per capita in the African LDCs perhaps reflects greater use of relatively high-salaried expatriate teachers, along with greater scarcity of qualified nationals.

Table E.5. Total public educational expenditure as percentage a/ of gross national product

| Country group | Number of Countries | 1970 | 1980 | 1985 |
|---|---|---|---|---|
| Developing countries | | | | |
| North Africa | 5 | 5.5 | 5.7 | 6.0 |
| Sub-Saharan Africa b/ | 39 | 4.1 | 4.5 | 4.6 |
| South Asia | 5 | 2.5 | 2.7 | 3.3 |
| East Asia NIEs | 3 | 3.2 | 3.3 | 4.5 |
| Other East Asia | 7 | 3.1 | 3.1 | 3.5 |
| Western Asia | 6 | 3.8 | 5,2 | 5.5 |
| Mediterranean | 4 | 4.0 | 3.8 | 3.0 |
| Western hemisphere | 25 | 3.4 | 3.6 | 3.6 |
| Subtotal, developing countries | 94 | 3.6 | 3.9 | 4.0 |
| China | 1 | 1.8 | 2.5 | 2.7 |
| Developed market economies | 24 | 5.3 | 6.1 | 6.0 |
| USSR and Eastern Europe | 5 | 6.5 | 6.8 | 6.7 |
| Total | 124 | 5.1 | 5.6 | 5.6 |
| Least developed countries | 26 c/ | 2.9 | 2.6 | 2.8 |
| Africa | 22 | 3.6 | 3.2 | 3.3 |
| Asia | 3 | 1.5 | 1.6 | 2.0 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data from UNESCO, Statistical Yearbook 1988, Table 4.1, and earlier volumes, and from IMF, Government Finance Statisics Yearbook 1987, p. 98.

a/ Country group percentages are weighted by the gross domestic product of the individual countries.

b/ Excludes Nigeria, where 1970 and 1980 percentages were 3.3 and 6.6, including non-Federal expenditures, and the 1985 percentage (federal only) was 1.2.

c/ Includes Haiti

Table E.6. Total public educational expenditure per capita a/, in 1980 dollars

| Country group | Number of countries | 1970 | 1980 | 1985 |
|---|---|---|---|---|
| Developing countries | | | | |
| North Africa | 5 | 70 | 82 | 85 |
| Sub-Saharan Africa b/ | 39 | 19 | 21 | 20 |
| South Asia | 5 | 5 | 7 | 10 |
| East Asia NIEs | 3 | 37 | 73 | 130 |
| Other East Asia | 7 | 11 | 18 | 22 |
| Western Asia | 6 | 142 | 217 | 167 |
| Mediterranean | 4 | 53 | 74 | 61 |
| Western hemisphere | 25 | 63 | 84 | 77 |
| Subtotal, developing countries | 94 | 27 | 38 | 38 |
| China | 1 | 3 | 7 | 12 |
| Developed market economies | 24 | 438 | 635 | 682 |
| USSR and Eastern Europe | 5 | 132 | 206 | 226 |
| Total | 124 | 112 | 151 | 155 |
| Least developed countries | 26 c/ | 7 | 6 | 7 |
| Africa | 22 | 12 | 10 | 10 |
| Asia | 3 | 2 | 3 | 4 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data underlying table VI.8.

a/ Country group expenditure levels are averages of individual country levels weighted by population.

b/ Excluding Nigeria, because available post-1981 data do not include large non-federal expenditures. See table IX.8, fn. b.

c/ Includes Haiti

Private expenditure on education accounted for another few per cent of GDP in 19 developing countries for which data from the early 1980s are available.10/ While much of this private expenditure probably is incurred by upper income families, it does indicate a willingness to pay that governments may wish to consider as they seek additional resources to expand enrolment, particularly in universities and other third-level institutions, and perhaps in secondary schools as well, which now prepare a small minority of the population for relatively high-income jobs.

6. Public expenditure per student

Public spending per student for education typically is 50 to 100 per cent higher for secondary education than at the primary level, and several times higher for third level education (table E.7). (The differences would be even greater if students enrolled in private schools were excluded, as the private share of enrolment is higher at the secondary level than at the primary level, especially in the developing countries, as discussed earlier. On the other hand, some of the public spending on education is used for partial support of private schooling, in some countries, but data on this use is not generally available.) In 1985, spending per student (in 1980 U.S. dollars) was only $31 for primary education in the LDCs ($47 in Africa and $16 in Asia) and $94 for the developing countries as a whole (excluding China, where it was only $18). For secondary education it averaged $91 in the LDCs ($163 in Africa and $43 in Asia) compared with $152 in the developing countries as a whole (excluding China) and $58 in China. For third-level education the averages were $363 per student in the LDCs ($1671 in Africa, $68 in Asia) $633 in the developing countries as a whole, and $1274 in China. In the African LDCs the spending per student is very high in proportion to GDP per capita, compared with other regions, especially for the second and third levels (see tables E.8 and E.9). Much of the high spending on third-level education is for students' living allowances. In several of the poorest sub-Saharan countries, such allowances were "about one-half of the average salary in the public sector" in 1982, regardless of the students' need. 11/ (In eight countries in Latin

Table E.7. Public current expenditure per student, a/ by level of education, in 1980 Dollars

| Country group | First level | | Second level | | Third level | |
|---|---|---|---|---|---|---|
| | 1980 | 1985 | 1980 | 1985 | 1980 | 1985 |
| Developing countries | | | | | | |
| North Africa | 169 | 183 | 612 | 423 | 933 | 1008 |
| Sub-Saharan Africa b/ | 64 | 64 | 264 | 198 | 2992 | 2110 |
| South Asia | 21 | 33 | 42 | 62 | 134 | 231 |
| East Asia NIEs | 197 | 374 | 210 | 347 | 503 | 503 |
| Other East Asia | 69 | 95 | 102 | 126 | 197 | 180 |
| Western Asia | 378 | 208 | 736 | 451 | 2606 | 1733 |
| Mediterranean | 91 | 83 | 157 | 134 | 1365 | 899 |
| Western hemisphere | 190 | 171 | 231 | 176 | 1420 | 1104 |
| Sub-total, developing countries | 97 | 94 | 171 | 152 | 744 | 633 |
| China | 12 | 18 | 33 | 58 | 1124 | 1274 |
| Developed market economies | 1253 | 1452 | 2303 | 2466 | 4508 | 4909 |
| USSR and Eastern Europe | 425 | 455 | 350 | 353 | 1518 | 1684 |
| Total | 181 | 187 | 530 | 545 | 2642 | 2636 |
| Least developed countries | 27 | 31 | 93 | 91 | 794 | 363 |
| Africa | 46 | 47 | 219 | 163 | 2841 | 1671 |
| Asia | 8 | 16 | 20 | 43 | 127 | 68 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat based on country data on enrolment, current expenditure as a percentage of GNP and the distribution of current expenditure by level of education from UNESCO, Statistical Yearbook 1988 and earlier volumes.

a/ Includes students enrolled in private as well as public schools (see text). Country group expenditures are averages of the individual country expenditures weighted by the number of students at the respective levels.

b/ Excluding Nigeria. See table IX.8, fn. b.

America and Southeast Asia, the poorest 40 per cent of the population received only 2 to 17 per cent of the total subsidies to higher education. 12/) At the primary and secondary levels, since pupil-teacher ratios are considerably higher in Africa than in the other major regions,13/ the relatively high spending per student implies very high average spending per teacher, relative to GDP per capita. This spending is mainly for salaries and other benefits received by the teachers and other personnel in the education system - 60 to 90 per cent in most of the developing countries. Two interesting exceptions among the LDCs are Tanzania and Bangladesh, where only about 35 per cent was spent on teachers' salaries and benefits. In Tanzania an unusually large share (30 per cent) was spent on teaching materials and scholarships (in 1979); Bangladesh spent less than 1 per cent on these categories, but spent 21 per cent on "school meals and board" and other welfare services (in 1985). 14/

Table E.8. Public Current Expenditure Per Student as Percentage of GDP Per Capita a/

| Country group | First Level | | | Second Level | | | Third Level | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1985 | | 1980 | 1985 | | 1980 | 1985 | |
| Least developed | | | | | | | | | |
| Africa | 18.1 | 20.3 | (19) | 86.0 | 77.0 | (19) | 1749.1 | 972.8 | (14) |
| Asia | 4.9 | 9.0 | (2) | 12.0 | 24.6 | (2) | 73.8 | 37.8 | (2) |
| Haiti | 6.1 | 4.2 | | 13.4 | 9.1 | | 133.0 | 122.5 | |
| Total | 12.4 | 15.3 | (22) | 53.1 | 53.4 | (22) | 992.4 | 552.2 | (17) |
| Developing, excluding China | 9.5 | 10.9 | (75) | 25.0 | 22.5 | (74) | 227.2 | 148.8 | (71) |
| China | 4.3 | 4.1 | | 11.5 | 13.1 | | 387.6 | 290.5 | |
| Total developing | 7.7 | 8.6 | (76) | 20.2 | 19.3 | (75) | 282.9 | 196.0 | (72) |

a/ The number of countries for which the data are available is given in parentheses.

Table E.9. Public current expenditure per student, as percentage of GDP per capita a/

| Country group | First Level | | Second Level | | Third Level | |
|---|---|---|---|---|---|---|
| | 1980 | 1985 | 1980 | 1985 | 1980 | 1985 |
| Developing countries | | | | | | |
| North Africa | 12 | 13 | 47 | 34 | 119 | 108 |
| Sub-Saharan Africa b/ | 17 | 18 | 76 | 65 | 1313 | 766 |
| South Asia | 8 | 11 | 16 | 22 | 56 | 77 |
| East Asia NIEs | 10 | 14 | 10 | 13 | 21 | 20 |
| Other East Asia | 8 | 9 | 11 | 11 | 36 | 31 |
| West Asia | 14 | 8 | 29 | 17 | 101 | 80 |
| Mediterranean | 7 | 6 | 11 | 8 | 92 | 46 |
| Western hemisphere | 9 | 9 | 9 | 8 | 57 | 54 |
| | | | | | c/ | c/ |
| Sub-total, developing countries | 10 | 11 | 22 | 23 | 205 (60) | 151 (62) |
| China | 4 | 4 | 12 | 13 | 388 | 291 |
| Developed market economies | 13 | 14 | 23 | 22 | 40 | 38 |
| USSR and Eastern Europe | 16 | 19 | 14 | 16 | 47 | 49 |
| | | | | | c/ | c/ |
| Least developed countries | 12 | 15 | 53 | 53 | 992 (306) | 552 (156) |
| | | | | | c/ | c/ |
| Total | 9 | 10 | 19 | 20 | 210 (57) | 159 (58) |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat based on country data on enrolment, the distribution of current expenditure by level of education and current expenditure on education as a percentage of GNP, from UNESCO, Statistical Yearbook 1988 and earlier volumes.

a/ Country group percentages are the average of individual country percentages weighted by country total population, except as otherwise noted.

b/ Excluding Nigeria. See table IX.8, fn. b.

c/ Weighted by number of third-level students.

7. Projection of enrolment trends

Future enrolment rates will depend on the changing size of the school-age population and on the evolving levels of spending per capita for the different levels of education. Given the relatively poor outlook for economic growth in the least developed countries and the high spending per student relative to per capita GDP in many of them, it will be necessary to reduce spending per student and/or to increase the share of their GDP devoted to education, if they are to reach the goal of universal primary school enrolment and have adequate second- and third-level enrolment to provide the skills needed for economic and social development.

Projections of first-, second- and third-level enrolment rates for females and males in 1990 and 2000, shown above in tables E.2, E.3 and E.4, have been based on the trends in enrolment in primary and secondary schools and in universities and other post-secondary training, and on the relation between enrolment rates and GDP per capita from 1970 to 1985. Under the baseline scenario for GDP growth from 1990 to 2000, the gross primary enrolment rate (including under-age and over-age children, as noted earlier) would reach 100 per cent or more for boys and over 90 per cent for girls by the year 2000 in almost all regions.15/ But in the African LDCs the average rate for girls would be only 56 per cent, and the rate for boys would be only 70 per cent. In the Asian least developed countries the rates would be 76 per cent for girls and 92 per cent for boys. Moreover, as the net enrolment rates are likely to remain 10 to 20 percentage points lower than the gross rates, large shares and numbers of primary school-age children (totaling about 39 million) would remain unenrolled in these countries.

If GDP growth were accelerated to annual rates one per cent above those assumed in the baseline, and if a normal proportion of the incremental GDP were allocated to primary education, the gross primary enrolment rates in the LDCs in the year 2000 could be one to three percentage points higher than under the baseline projections (reaching about 69 per cent for girls and 81 per cent for boys in the least developed countries as a whole). To reach the

goal of universal primary enrolment (a net enrolment rate of 100 per cent) would, with current costs per student, require a significant increase in the allocation of resources to primary education. In sub-Saharan Africa, at least 20 countries (most of them LDCs) would have to raise their spending on primary education, which is projected to be about 1.5 per cent of GDP in the baseline scenario, to 2.1 per cent to reach 100 per cent gross enrolment for boys and to 2.4 per cent to also reach 100 per cent gross enrolment for girls. Further increases of similar size would be needed to reach net enrolment rates of 100 per cent, and for the costs of additional school capacity and teacher training. Governments will no doubt be under considerable pressure to reduce the cost per student in these countries, as well as to increase private funding for primary education.

In secondary education, most of the developing regions would reach gross enrolment rates of 48 per cent or more for males and 42 per cent or more for females in the year 2000 under the baseline scenario (see table E.3). But in the LDCs the average rate for females would be only 15 per cent — 10 per cent in Africa and 20 per cent in Asia; the average rate for males would be only 23 per cent — 16 per cent in Africa and 33 per cent in Asia. In contrast, in most of the developed countries and in the East Asian newly industrialized economies, the gross enrolment rates for both males and females would approach 100 per cent.

Although there are no internationally agreed targets for second level enrolment rates, the increasing need in the modern economy for workers with at least second level education suggests that a goal of 75 per cent for the second-level gross enrolment rate may be a useful benchmark target. (The corresponding net enrolment rates and graduation rates would be significantly lower.) Compared with the baseline projection, the LDCs would have to allocate an extra 2.1 per cent of GDP in order to reach 75 per cent male enrolment by 2000 and a further 2.3 per cent to also reach that target for females. To the extent that operating costs per student in these countries are high because of reliance on foreign teachers, some reduction can be expected as an increasing number of nationals qualify as second-level teachers. But the trends in third-level enrolment, discussed below, suggest that such progress will be limited during the 1990s.

The third-level gross enrolment rate (defined as total university and other post-secondary enrolment divided by population aged 20-24) shows a wide range among the developing regions in the baseline scenario for the year 2000, from 50 per cent for males in the East Asian newly industrialized economies to only 1.4 per cent for females in the African LDCs (table E.4). A one per cent higher rate of GDP growth in the 1990s would raise the enrolment rates by about half a percentage point above the baseline rates in most regions. This would be a relatively large increment in the least developed countries, but it would still leave them with very low enrolment rates compared to the other developing regions.

As noted earlier, spending per student is particularly high in the African LDCs, and an increase of third-level enrolment rates to, say, ten per cent would require an increased allocation of several per cent of GDP. This suggests that third-level enrolment rates will not increase significantly in these countries unless their relatively high costs per student are reduced — by making better use of the available teachers and facilities, reducing students' living allowances, or relying more on enrolment in foreign universities, financed by foreign scholarships and part-time employment in the host countries.

## 8. Policy issues related to quality — relevance, efficiency and equity

The impressive increases in enrolment in recent decades and the further increases expected by the year 2000, especially in the developing countries, relate to the input of students into the educational system, but there also are important issues of efficiency, relevance and equity, all of which are aspects of the quality of education offered by schools and attained by students.

### a. Relevance and efficiency of primary education 16/

In most countries, primary schools have a dual function — to teach essential skills and knowledge and to prepare students for further learning. Almost everywhere priority is given to reading, writing and basic

mathematics. Over the last two decades, however, schools in many countries also have been mandated to promote health, nutrition, political orientation, and social equity, usually without additional or sufficient resources to do so. The result often has been poor achievement in these areas as well as in the core curriculum. Emphasis on relevance to the local and immediate environment can take undue precedence over more general competence which students will need over their life-time. In deciding on the appropriate balance between immediate and long-term relevance, it may be noted that concurrent and subsequent opportunities for informal learning can supplement formal education.

While there has been rapid expansion of education in most developing countries, the level of achievement of many students is very low. 17/ In part this may reflect a lack of early environmental stimulation and the inadequacy of health and nutrition. "Differences in achievement among schools within countries related mainly to the qualities of the students entering the school; factors such as teaching methods or equipment played only a minor part". 18/ Better and more equitable early childhood conditions can increase efficiency and equity in achievement at school, as can programmes that support children's health and nutrition while in school.

Low achievement by students also reflects inadequate teacher training and the strain on resources associated with rapid expansion of enrolment - such as overcrowded and ill-equipped facilities, lack of textbooks and other materials, and very high pupil/teacher ratios. The requirements for initial subject mastery are relatively low for teachers in many countries, and recurrent training is needed. Teachers recruited from other socio-economic and cultural contexts often have misconceptions about the students that have to be overcome before they can teach effectively. Teacher absenteeism also is a critical concern. Appropriate wages, benefits, rank and recognition are needed.

Improving teacher quality in the short run is difficult in most countries, because of the difficulty of rapidly upgrading their skills or

paying for better-qualified replacements. A relatively successful exception was Tanzania's program to "put new recruits into the schools to teach under the supervision of experienced colleagues and (then bring) them to thecolleges for intensive short bouts of training .... Later assessments indicated that the 'crash trained' teachers were more effective in the classrooms than their conventionally trained contemporaries. What is more, their training proved considerably cheaper than the usual." 19/ Salaries represent a high percentage of the educational budget, and increasing them tends to cause similar wage increases throughout the civil service, which many countries cannot afford. Instead, it may be possible to use nonmonetary incentives to recruit and retain teachers, without extending them to other civil service employees.

The importance of pupil/teacher ratios is unclear. Although research indicates that very small classes (fewer than 15 students) are more effective than large ones, the differences among larger classes are uncertain. By 1985 most developing countries had reduced their average primary class size to a range of 25 to 39 students per teacher, but it is unclear whether this was a cost-effective way to raise quality, compared with such alternatives as spending more in learning materials or innovative instructional technologies.

The availability of good educational materials is one of the most powerful and consistent determinants of learning achievement. The complete lack of books in schools and even in teachers' colleges in some African countries is a grave threat to their future. Properly designed materials can help train unqualified teachers as well as the students. In certain situations, programmed instructional materials and electronic educationaltechnologies can enhance learning and efficiency, offsetting the negative effects of multigrade classrooms, large classes and inadequately trained teachers. However, in times of fiscal restriction, expenditure on physical inputs is restricted more than salaries.

The importance of the quantity and quality of buildings or equipment is not as clear as that of instructional materials, but overcrowding in primary schools, especially in early grades, is believed to be a major source of poor achievement and attrition. To reduce over-crowding, it may be cost-effective to have so-called "split shifts", with two or more groups of students using the same school room or other facility during different hours or days, rather than build additional facilities.

Ineffective types of examinations and other systems of incentives limit the quality of learning in many countries. If the priorities of pupils and their teachers are to perform well in standardized examinations in order to secure good jobs, and if the examinations test rote-learning, then repetition and memorization are encouraged, rather than the ability to analyze problems. Graduation can become merely an indicator of age and perseverance, rather than evidence of learning. Research on learning has found that information, to be absorbed, must be disassembled and then reshaped by the learner; then it can be connected with previous knowledge and applied to future situations. In noncompulsory educational programmes for youth and adults, motivation to join, to continue and to succeed is even more critical.

Improvements in quality and efficiency may be possible, without raising costs, through curricular and examination reform and less reliance on seniority as the criterion for salary increases. Relatively small increases in expenditures on training in leadership and management for head teachers and the use of fees for additional textbooks may yield high returns. 20/ Increased accountability of teachers and administrators to parents and other members of the local community may stimulate greater enthusiasm and support for educational improvements.

b. Attendance, drop-out and repetition

To attain literacy and other education goals, children must remain enrolled and attend regularly for a sufficient length of time. Learning achievement is proportional to the time spent in learning activities. Because

of teacher and pupil absenteeism, holidays, and the needs of agricultural and other employment cycles, the pupils' learning time in many developing nations is less than half of the 800 to 1000 hours a year that are common in developed nations. Poor attendance often causes pupils to repeat one or more grade-levels or to drop out of school entirely.

In 86 developing countries, 18 per cent of the pupils starting school drop out before reaching grade 2, and only 71 per cent reach grade 4. 21/ In order to reduce drop-out rates, education authorities must consider to what extent they are caused by failure to pass an end-of-the year exam, lack of teachers and facilities, school fees, or other reasons. High drop-out rates between grades 1 and 2 deserve special attention.

Before dropping out, many pupils repeat one or more grades. The percentage of primary school enrolment constituted by repeaters shows wide disparities among the developing countries. Considering that repeaters use resources which could be made available to children who are not yet enrolled, more attention might usefully be given to this issue. Educators differ in their opinions of the benefit pupils may gain from repeating a grade as opposed to being promoted automatically. There is little doubt that a child having serious problems in assimilating the programme in one grade is likely to continue experiencing difficulties if promoted to the next grade without some extra assistance. But it is not clear how repetition will reduce these problems unless special help also is given. Gains from repetition alone are minor, rarely cost-effective, and often promote lower self-esteem and an increased propensity to drop-out. Prevention of repetition through improved instruction and in-class remediation is often less expensive than accepting it as an unavoidable part of the education process. But many schools in the LDCs do not have or use enough resources to remedy initial learning disadvantages or to enable the slower learner to catch up with that of the other pupils.

To summarize, the current understanding of the relationships among inputs and outputs of education systems suggests the following priorities to increase the relevance and efficiency of primary schooling: (1) improving the availability and use of instructional materials; (2) enhancing teacher

effectivenss by emphasizing subject mastery, communication skills, and teacher motivation; (3) improving managerial skills, community and institutional structures, and individual and organizational incentives; and (4) increasing the time actually spent on learning.

C. Effectiveness of secondary and higher education

For secondary and higher education, high costs per student tend to limit the growth of enrolment. The costs per student for second-level and third-level education are especially high, relative to per capita GDP, in the African LDCs, and subsidies are allocated inequitably in several regions. Greater use of fees, student loans and need-based rather than general subsidies increases the resources available for secondary and higher education and allocates them more equitably. 22/

The curriculum in many secondary schools is focused mainly on the goal of preparing students for university entrance in conventional academic subjects. Yet in a growing number of developing countries, university graduates in a number of fields are encountering great difficulties in finding employment, even while there are shortages of adequately trained technicians. Many developing countries have adopted systems of secondary and university education from the developed countries — systems that emphasize specialized academic subjects, even in programmes dealing with industry and agriculture, at the expense of more general training adapted to local circumstances. 23/

In the least developed countries, the very low third-level enrolment rates may be largely explained by the small size of their economies, which do not allow for the minimum size of "market" to be attained for many subjects requiring third-level training. The cost effectiveness of sending students abroad for third-level education is an open issue, however. While it probably is less expensive, per student, than rapidly building up the necessary physical facilities and importing foreign teachers, at least in small developing countries and highly specialized fields, it contributes to the "brain drain" of many of the developing countries' best secondary-school graduates and is costly in foreign exchange to the extent that their expenses

are not covered by foreign scholarships or employment in the host countries. As a majority of the least developed countries have a large number of well-educated nationals living abroad, a desirable alternative way to acquire high-level skills is to attract more of those nationals back, e.g., through TOKTEN (Transfer of knowledge through expatriate nationals) projects sponsored by UNDP. 24/

D. Equity 25/

Inequities in the availability of education in the LDCs and other countries most commonly relate to poverty, location, gender, religious or ethnic identification, and physical or mental disability. Achievement of equity goals requires specific interventions and acceptance of the reality that compensatory resources and measures are necessary to offset the disadvantages of certain groups. Poor families may require assistance with the costs of school fees, uniforms, and transportation. Equity in rural areas may require flexible scheduling of the school year to minimize conflict with agricultural planting and harvesting.

While low enrolment of girls often reflects the attitudes of their families and the wider community, schools themselves may reinforce such attitudes. Differences in teacher-pupil interactions and pupil use of materials and equipment can create inequities even within a single school or classroom. In some schools females receive less attention from the teacher and experience lower expectations in terms of their school performance. To promote participation and successful achievement by girls in communities which disapprove of co-educational classes, the educational system could provide separate schools for girls, or even in-home instruction. Where older girls commonly are expected to stay at home to care for their younger siblings, other ways could be used to provide necessary day care.

With regard to youth and adult education programmes, there is a major issue of equity among people of different ages. There also is considerable inequity in the allocation of subsidies for higher education, as noted earlier. Given the low levels of education of much of the adult population,

it is not realistic to expect every country to meet immediately even the basic knowledge requirements of all of its adults. Strong arguments exist for giving women highest priority, considering their history of being educationally underserved, their economic contributions to agriculture and industry, and their influential role as mothers and often as head of a single-parent household. Their opportunities should include access to training in non-traditional occupational roles for women, e.g., through agricultural extension services and assistance to small-scale enterprise development.

## Notes to Section B, Education

1/ For an elaboration of the relevance of human resources development to development strategies, see Committee for Development Planning, Human Resource Development: A Neglected Dimension of Development Strategy (United Nations publication, Sales No. E.88.II.A.11), and "Human Development in the 1980s and Beyond" (special issue of) Journal of Development Planning, Keith Griffin and John Knight, guest eds., No. 19, 1989.

2/ UNESCO, "Preliminary results of the 1989 assessment", November 1989.

3/ UNCTAD, The Least Developed Countries Report 1987, p. 89.

3A/ World Bank, Financing Education in Developing Countries, an Exploration of Policy Options (Washington, D.C., 1986), Table 3, p.7.

4/ J.B. Knight, R.H. Sabot and D.C. Hovey, "Is the Rate of Return on Primary Schooling Really 26 per cent?", mimeo, June 1989. This analysis is part of a larger study by Knight and Sabot, Educational Expansion, Productivity and Inequality - The East African Natural Experiment, World Bank/Oxford University Press, forthcoming (February 15, 1990).

4A/ Committee for Development Planning, Report on the twenty-fourth session, New York, 12-15 April 1988, E/1988/16. ara; 98;

5/ UNESCO, October 1982 computer printout.

6/ UNCTAD, The Least Developed Countries, 1988 Report (United Nations publication, Sales No. E.89.II.D.3), p. 69.

7/ The gross enrolment rate, or ratio, includes in the numerator children older or younger than those in the denominator, i.e. the number in a country's official age-ranges for different levels of education. Net primary enrolment rates, which exclude underage or overage children from the numerator, tend to be 10 to 20 percentage points lower.

8/ UNCTAD, The Least Developed Countries, 1985 Report, TD/B/1059, para. 314, p. 107.

9/ Based on UNESCO, "Development of private enrolment first and second level education, 1975-1985", CSR-E-57, ST-89/WS/4, Paris, May 1989, Tables 2 and 5 and annex Tables I and II.

10/ United Nations Statistical Office, national accounts data bank.

11/ World Bank, World Development Report 1988, p. 134

12/ Ibid, pp. 135-136.

13/ The ratios in Africa averaged 36 at the primary level and 25 at the secondary level in 1986, versus 30 and 19 respectively, in all of the developing countries. UNESCO, "A Review of Education in the World: A Statistical Analysis", ED/BIE/CONFINTED 41/Ref.1, 1 October 1988, table 13.

14/ UNESCO, Statistical Yearbook 1987, table 4.2.

Notes to Section B, Education, continued

15/ The projections tend to be a few percentage points lower than those recently prepared by UNESCO (November 1989), which are based on historical trends but are not specifically related to economic trends. The projections shown for China are those prepared by UNESCO, in view of a high degree of uncertainty regarding the outlook for China's economic performance in the 1990s.

16/ For more detailed discussion, see "Meeting Basic Learning Needs: A New Vision for the 1990s", background document for the World Conference on Education for All, Thailand, 5-9 March 1990, and John Oxenham (with Jocelyn Dejong and Steven Treagust), "Improving the Quality of Education in Developing Countries", Journal of Development Planning No. 19, 1989, pp. 101-125.

17/ An international comparative study issued in 1976 found that "educational attainments requiring one year of schooling in an industrialized country tend to require three or four years of schooling in the average school of the developing countries examined. Children in India spent more time in school compared with their counterparts in the industrialized countries, but achieved only 48 per cent as much in reading and about 50 per cent in science. IEA (International Association for the Evaluation of Educational Achievement), The IEA Six Subject Survey: An Empirical Study of Education in Twenty-one Countries, by David A. Walker, Stockholm: Almqvist and Wiksell, 1976, and IEA, The National Case Study: An Empirical Comparative Study of Twenty-one Educational Systems, by A.H. Passow, Stockholm: Almqvist and Wiksell, 1976, cited in Oxenham, op. cit., p. 102.

18/ IEA (International Association for the Evaluation of Educational Achievement), The IEA Six Subject Survey: An Empirical Study of Education in Twenty-one Countries, by David A. Walker. Stockholm: Almqvist and Wiksell, 1976, p. 120, cited in Oxenham, op. cit., p. 104.

19/ Oxenham, op. cit., p. 110.

20/ E/1988/16, op. cit., para. 99.

21/ UNESCO, ED/BIE/CONFINTED 41/Ref.1, (Oct. 1988), pp. 34-35.

22/ See World Bank, World Development Report 1988, pp. 136-137, and World Bank, Financing Education in Developing Countries, an Exploration of Policy Options (Washington, D.C., 1986).

23/ Report of the ACC Task Force on Long-term Development Objectives on its fifteenth session, New York 8-10 September 1987, ACC/1987/14, para. 68.

24/ UNCTAD, TD/B/1059, op.cit., para. 315, p. 107.

25/ For more detailed discussion, see "Meeting Basic Learning Needs: A New Vision for the 1990s", background document for the World Conference on Education for All, Thailand, 5-9 March 1990.

## C. Health

### 1. Trends in life expectancy and mortality

Health, like education, is both a goal of development and a means to achieve the related goals of higher labour productivity and total economic output. The simplest indicator of people's health is life expectancy at birth (i.e., the average number of years a newborn baby can be expected to live if current age-specific mortality rates continue). In the developed countries, it has increased by 4 years, from 69 years in the early 1960s to 73 years in the late 1980s. In the developing countries as a whole (excluding China), and in the Asian LDCs, it increased by 11 years -- from 47 to 58. But in the African LDCs, the increase was only 8 years. In contrast, life expectancy in China increased by 20 years during this period.

Life expectancy at birth is generally several years longer for women than for men, especially in the developed countries: 77 years for women versus 70 for men in the late 1980s; in the developing countries, it is about 61 years for women and 59 for men. In the African LDCs it is only 48 years for women and 45 years for men. In the Asian LDCs, the average is about 51 years for both groups. (See tables P.3 and P.4 in section A, Population.)

In the past decade, there have been decreases in the infant mortality rate in nearly all countries, but more than a quarter, representing 29 per cent of world population, still have a rate above 100 per 1,000 live births, 1/ while the average in the developed countries is about 18 (15, excluding South Africa). Continued reductions are projected for the 1990s, but the average for the least developed countries is projected to

remain above 100 during the period from 1995 to 2000, falling to 94 between 2000 and 2005. The rate is somewhat higher in the African LDCs than the Asian LDCs (139 versus 127 in 1980-85), and the difference is expected to continue through the 1990s. (See table P.5 in section A, Population).

The goal of reducing infant mortality rates below 120 per 1,000 live births by 1990, which was set forth in the International Development Strategy for the 1980s, is not expected to be met by 21 countries, including 18 LDCs, and 59 countries are projected to still have rates above the goal of 50 in the year 2000, including 25 LDCs in Africa and 7 in Asia (table H.2). Similarly, it is projected that 46 countries will not meet the Strategy's goal of increasing life expectancy to 60 years or more by the year 2000; 32 of these will be least developed countries, including 24 in Africa and 7 in Asia.

Maternal mortality rates are a good indicator of the health situation and status of women. It is the largest cause of death among women of reproductive age in most developing countries. In less developed regions, there were 450 deaths for 100,000 live births around 1983, against 30 in developed countries. 2/ Since these rates are higher in countries with high crude mortality rates, they should follow the general trends of mortality and improve by the year 2000. But the wide disparities among countries are not likely to disappear, especially as the increase of life expectancy is expected to be slower in Africa, for example, which accounts for 30 per cent of maternal deaths, as against 18 per cent of births.

Among the factors that contribute to the high levels of maternal mortality in the developing countries are pregnancies in the youngest and

Table H.2 Number of countries with infant mortality rates or life expectancy not meeting the goals set for 1990 and 2000 in the International Development Strategy for the 1980s

| Country group | Total number of countries in group | ------- Infant mortality rate ------ Above 120 in 1990 | Above 50 in 2000 | Life expectancy below 60 in 2000 |
|---|---|---|---|---|
| Developing countries | | | | |
| North Africa | 5 | 0 | 3 | 0 |
| Sub-Saharan Africa | 45 | 17 | 41 | 36 |
| South and East Asia | | | | |
| South Asia | 7 | 3 | 6 | 4 |
| East Asia newly-industrialized economies | 3 | 0 | 0 | 0 |
| Others | 9 | 1 | 3 | 3 |
| Western Asia | 13 | 0 | 3 | 2 |
| Mediterranean | 4 | 0 | 0 | 0 |
| Western hemisphere | 28 | 0 | 3 | 1 |
| Total, developing countries | 114 | 21 | 59 | 46 |
| Least developed countries | 36a | 18 | 33 | 32 |
| Africa | 27 | 15 | 25 | 24 |
| Asia | 8 | 3 | 7 | 7 |
| China and Asian planned economies | 4 | 0 | 0 | 0 |
| Developed countries | 33 | 0 | 0 | 0 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data underlying tables IX.12 and IX.13.

a Includes Haiti.

oldest ages of the reproductive period, maternal depletion through pregnancies that are too closely spaced, high-parity births (i.e., births to women who already have had a high number of pregnancies), lack of access to health services and lack of trained birth attendants. Inadequate nutrition in childhood and adolescence, as well as in adulthood, is an important contributing cause of maternal deaths. A number of studies have shown that deaths resulting from complications of poorly performed abortions contribute a significant proportion of total maternal deaths. Family planning and good primary health care before and during pregnancy could greatly reduce the number of potentially fatal complications. However, as a significant proportion of complications cannot be predicted or prevented, speedy access to emergency care is also of utmost importance. Inadequate health service facilities and poor transporation networks are major factors in maternal deaths among rural women in developing countries.3/

## 2. Disease and mortality - prevalence of major types of disease, and their impact on mortality 4/

The great majority of deaths, especially of children and older adults, have some type of disease as their proximate cause. In the developing countries of Africa and Asia, infectious and parasitic diseases (including certain respiratory diseases) account for about half of all deaths, the majority occurring among infants and young children. This group of diseases account for only one tenth of all deaths in industrialized countries, where 50 per cent are from circulatory diseases and 19 per cent from cancer. All developing countries list diarrhoea as one of the most serious problems

affecting the health of their child population and one of the main reasons for contact with the health system. Diarrhoeal dehydration can now be treated quite adequately with low-cost oral rehydration therapy, yet some 3 million children still die from it each year. 5/ Six major preventable diseases of childhood - diphtheria, pertussis, neonatal tetanus, poliomyelitis, measles and tuberculosis - together kill some 4 million children each year and cause disability in 4 million more. These diseases have been selected as targets for immunization in most countries, but some still have not allocated the relatively modest resources needed to provide this protection.

Malaria and tuberculosis remain major public health problems, with improvement in some countries offset by deterioration in others. Malaria is an important cause of child mortality, especially in tropical Africa. Efforts to control the disease have been hampered by the emergence of mosquitoes that are resistant to the more readily available insecticides and of forms of the malaria parasite that are resistant to drugs.

Many infectious and parasitic diseases can be overcome by improvements in environmental and living conditions and other preventive action. In India, where 45 per cent of the national health budget is used for control of malaria by conventional methods, health officials are enlisting villagers to carry out new, environmentally safer ways to control malaria-bearing mosquitoes. 6/

Viral and bacterial epidemics are still a threat, especially in view of inadequate surveillance and preventive measures, and human disruptions of ecological factors. The present and foreseeable harm from the AIDs virus is a

serious threat, especially in some of the poorer developing countries, as discussed in the next section. Acquired resistance and natural insensitivity of micro-organisms and other vectors to available drugs and pesticides have slowed progress in disease reduction and increased the cost of control. Biotechnology is being used to develop a new generation of vaccines and will no doubt be used to develop drugs that target specific organs and cells, reducing unwanted side-effects.

Given the extremely high rates of infant mortality prevailing in the least developed countries, mass immunization campaigns to protect children against six diseases (diphtheria, tetanus, whooping cough, measles, poliomyelitis and tuberculosis) have become the cornerstone of efforts to boost child survivorship. Diarrhoeal diseases, acute respiratory infections, malnutrition and the six target diseases constitute the principal causes of infant and child mortality. While substantial progress has been made in a number of developing countries, drought, famine, civil unrest, difficulty in guaranteeing an adequate supply of sterilized equipment, structural adjustment policies and other factors have hindered progress in the least developed countries. Twenty-five of the 36 least developed countries for which data exist have immunization coverage of less than 50 per cent for diphtheria, tetanus and pertussis (DPT) vaccine. Although immunization is one of the most cost-effective of all health services, it appears that most of the countries will not achieve the 1990 target of complete immunization.

The most often cited major health concerns (by 17 Governments of LDCs) from the point of view of mortality policy, were diarrhoeal diseases, malaria,

malnutrition, pertussis, tetanus, tuberculosis and unsafe drinking water. Another concern that has recently gained prominence is the spread of the AIDS virus. Several of the least developed countries have rates of AIDS (number of AIDS cases per 100,000 population) that rank among the highest in the world. To cope with the problems posed by the AIDS epidemic the least developed countries have begun to implement, often with international assistance, a series of measures such as the creation of a national AIDS committee to co-ordinate government activities, health and sex education campaigns, testing of high-risk groups, blood screening programmes and stricter border controls.

The Substantial New Programme of Action for the Least Developed Countries calls for strategies and actions in the health field to be "based on the concept of primary health care and particular importance placed on efforts to provide by 1990 safe drinking water and adequate sanitation, immunization of all children against major infectious diseases, as well as the necessary caloric and protein intake".

### 3. The AIDS epidemic

Acquired immunodeficiency syndrome (AIDS) and the entire spectrum of diseases associated with human immunodeficiency virus (HIV) infection have rapidly emerged as major global and national public health problems. About 183,000 cases of AIDS have been reported in 152 countries, as of 30 September 1989, but the actual number is estimated to be over three times as high. 7/ In addition, there are estimated to be 6 to 8 million who are infected with the virus, but do not yet show major symptoms. 8/ The latest estimates show a

continuing and even increasing spread of the disease. WHO's projections indicate that the epidemic will continue to grow throughout the next decade, with about 15 million new infections expected in the 1990s. Moreover its geographic scope will be much wider, as the disease is already gaining footholds in previously unaffected regions; in countries where it is already prevalent, it is growing in hitherto lightly impacted population groups, including children and rural communities. 9/

As the epidemic has been followed for only about 7 years, it is not known what proportion of persons infected with HIV will ultimately develop the symptoms of AIDS. Current estimates are that about 50 per cent will develop AIDS within 10 years, but the percentage that will develop AIDS after 15 or 20 years cannot be predicted at this time, nor can the proportions of persons with AIDS who will eventually die of the disease. The case fatality rate among those who develop symptoms appears to be high, but many essential epidemiological characteristics, including the natural history of asymptomatic infections have yet to be elucidated. The cumulative total of AIDS cases worldwide is projected by WHO to exceed 1 million by the early 1990s and could exceed 3 million by the late 1990s. 10/

AIDS is a prolonged, physically debilitating illness, that often is economically and emotionally devastating for the victims and their families. Most of the people with AIDS are young and middle-aged adults, whose illness and death deprive their countries of a valuable resource. The number of infants born with HIV infections is increasing, particularly in some developing countries, jeopardizing their recent hard-won gains in infant and

child survival. At present there are no very effective medical techniques for the prevention or treatment of AIDS. Recently an experimental vaccine has been found quite successful in protecting monkeys against simian AIDS, which is caused by a virus similar to HIV, but it probably will be at least several years before this could lead to a safe, effective vaccine against human AIDS. 11/ Consequently, educational campaigns to prevent it from spreading are essential while the search for effective treatment continues. The main lines of defence against AIDS are education to reduce high-risk behaviour and provision of a safe blood supply for transfusions, through screening for HIV antibodies. As with most other infectious diseases, a fairly stable prevalence of HIV infections will eventually be established, but how high or low that prevalence will be, will depend on the effectiveness of prevention programmes.

The costs of the HIV/AIDS epidemic could prove staggering for both the developed and the developing countries. In the United States, the country with the most reported cases, total Federal expenditures on AIDS are projected to exceed $2,000 million in fiscal 1989; the average lifetime costs per AIDS patient in the United States are estimated at $50,000 to $60,000. 12/

Treatment with AZT, the most effective drug available so far for HIV/AIDS, has been costing about $8,000 per patient per year. (Some selective reductions in price have recently been offered by the manufacturer.) Clearly, such costs are beyond the means of the developing countries, where per capita expenditure on health often does not exceed $5 annually (see below). The enormous cost of caring for AIDS patients threatens to divert resources from other health programmes, with adverse consequences for overall health and mortality.

Although the United States has by far the largest number of reported AIDS cases, several developing countries in the Americas and in central and eastern Africa have a higher incidence of infection. The impacts of the disease in these countries will go beyond those normally the concern of public health authorities; associated ethical and humanitarian problems will increase, in terms of human suffering, and their economic and social development may be held back severely, unless treatments are found or a vaccine is discovered in the next few years and made widely available. In some countries in Africa, the incidence of infection is 10 per cent and up among the adult urban population, both male and female, especially those between ages 20 and 50. Workers in this age group are essential in the formal sector, notably in the mining industry in certain African countries. Policy-makers in countries whose key industries are about to be seriously impacted by AIDS, to a point where they might no longer be internationally competitive, may be forced to use the limited means available to retard the impact of the disease on the work force in these industries. In the case of the mining industry in Africa, the demographic structure and traditions of health care offer some potential for a comparatively good response to a sustained educational effort.

## Estimated demographic impact of AIDS in a hypothetical country in sub-Saharan Africa

While it is not yet possible to project the long-term incidence of HIV infections and AIDS cases with much certainty, WHO has used the available information to estimate the impact of AIDS on mortality and population growth in a hypothetical country, with characteristics similar to those in some areas

of Central Africa, where up to 25 per cent of the population 20 to 40 years of age in some cities were infected with HIV in 1987. In the WHO model, the rate at which infected persons progress to AIDS has been estimated to be 20-25 per cent within five years and close to 50 per cent within 10 years. The progression rate for adults is projected to be 75 per cent within 15 years and 100 per cent within 20 years. The model assumes that half of the infants born to HIV-infected mothers will be infected, and that 80 per cent of infected children will have progressed to AIDS by their fifth birthday. Because of the high infection rates of sexually active females in some urban areas, about 10 per cent of children under five years old in urban areas are assumed to be infected. Persons with AIDS are assumed to die in the same year in which the disease develops. With a population of 20 million and an average HIV infection prevalence of 2.3 per cent in the country as a whole, there would be 450,000 infected people.

In the absence of AIDS, the population would increase by about 6.5 million between 1987 and 1997. Between 1987 and 1997, there would be 670,000 deaths from AIDS, including 330,000 urban residents (167,000 adults and 163,000 children) and 340,000 rural residents. Without the impact of AIDS on fertility (fertility would be reduced by about 7 per cent overall), fertility would be 10 per cent less in urban areas, where the urban population would total 10.9 (10.2 in 1987), the projected population increase between 1987 and 1997 would be 70 per cent less with AIDS; the under-5 age group in 1997 would have grown 50 per cent less than without AIDS. Projections beyond 1997 would depend on the pattern of spread of the HIV infection. If the virus were to continue to

increase in urban areas and to spread extensively in rural areas, population growth could turn negative. 13/

### 4. Nutrition, water supply and sanitation

Adequate nutrition, safe drinking water and adequate sanitation are vital for the prevention of serious disease and the maintenance of good health and high labour productivity. In most parts of the world, nutrition has improved over the past 25 years, as reflected in declining infant and child mortality rates and in declining percentages of the total population suffering from undernutrition. But the improvements in child nutritional status in the 1970s ceased, on average, in the 1980s. 14/ Some 100 million children under the age of five show protein energy malnutrition; more than 10 million suffer from the severe form that is normally fatal if not treated. 15/ The estimated number of people suffering from severe undernutrition (with calorie consumption below 1.2 times the basal metabolic rate, or BMR) in 69 developing countries increased from 320 million around 1980 to 348 million around 1984, and the number below 1.4 BMR increased from 645 to 730 million (table 4.3). The basal metabolic rate is the energy needed when resting and lying relaxed; it varies with body weight and age.) The proportion of the population that is undernourished (as in the early 1970s in India, North Africa and Central America) has risen and in overall improvements in South America. The proportion rose sharply in sub-Saharan Africa, which has suffered long-term declining food availability per capita and increased malnutrition, as economic stress and severe drought have contributed to the deterioration.16/ Within regions, economic stress in the 1980s has been

Table H.3 Estimates of undernutrition in 89 developing countries, 1970-2000

| | 1969-1971 a/ | 1979-1981 a/ | 1983-1985 | 2000 |
|---|---|---|---|---|
| I. Below 1.2 BMR b/ | | Percentage of population | | |
| 89 countries | 18.6 | 14.7 | 14.6 | 10.5 |
| Africa (sub-Saharan) | 23.5 | 21.9 | 26.0 | 20.3 |
| Near East/North Africa | 15.7 | 6.7 | 5.6 | 4.6 |
| Asia c/ | 19.5 | 15.6 | 14.3 | 8.7 |
| Latin America | 12.7 | 9.8 | 9.5 | 8.0 |
| | | No. of persons (millions) | | |
| 89 countries | 316 | 320 | 348 | 353 |
| Africa (sub-Saharan) | 63 | 78 | 105 | 137 |
| Near East/North Africa | 28 | 16 | 15 | 18 |
| Asia c/ | 190 | 191 | 191 | 155 |
| Latin America | 35 | 35 | 37 | 43 |
| II. Below 1.4 BMR b/ | | Percentage of population | | |
| 89 countries | 27.0 | 21.8 | 21.5 | 15.6 |
| Africa (sub-Saharan) | 32.6 | 30.6 | 35.2 | 28.7 |
| Near East/North Africa | 22.9 | 10.8 | 9.1 | 7.6 |
| Asia c/ | 28.7 | 23.5 | 21.8 | 13.9 |
| Latin America | 18.5 | 14.6 | 14.2 | 11.6 |
| | | No. of persons (millions) | | |
| 89 countries | 460 | 475 | 512 | 532 |
| Africa (sub-Saharan) | 86 | 110 | 142 | 194 |
| Near East/North Africa | 41 | 25 | 24 | 29 |
| Asia c/ | 281 | 288 | 291 | 246 |
| Latin America | 51 | 52 | 55 | 62 |

lture: Towards 2000, C/87/27, Rome, July 1987,

1969-71 and 1979-81 are somewhat different from Food Survey because some smaller countries of the cluded here and because revised estimates of per these years were used to compute them. These t significant.

te (see text).

and the centrally planned economies, for which data

strongly associated with malnutrition, based on a recent survey of 33 countries, including 14 LDCs in Africa. In Bangladesh, the available evidence suggests that wasting (low weight relative to height) among rural children declined dramatically from 1975 to 1985. But 10% of the children still were severely underweight in 1985/86, and another 50% were moderately underweight. 17/

Assuming that the recent pattern of income distribution and food consumption in relation to per capita income continues, FAO estimates that the total number of people suffering acute malnutrition will increase slightly, to 353 million (in 89 developing countries) by the year 2000, and the number below 1.4 BMR will increase to 532 million (table H.3). To reduce these numbers significantly, major improvements will be needed in the "system" of income and food distribution in many countries, as well as accelerated food production.

Water supply and sanitation

The percentages of the population which have safe drinking water supply and adequate sanitation have increased in many developing countries from 1975 to 1985, though variations in national interpretations of these concepts and changes in the number of countries reporting on them to WHO limit the comparability of the data, both between countries and over time. In 1985, 78 per cent of the urban population and 42 per cent of the rural population in 89 countries had safe supplies of drinking water, compared with 74 per cent of the urban population (in 76 countries) and only 19 per cent of the rural

population (in 69 countries) in 1975. 18/ Although the percentage served did not increase much in the urban areas, the number of people served increased greatly, along with total urban population. The percentage of urban population with adequate sanitation increased from 51 per cent in 60 countries in 1975 to 61 per cent in 65 countries in 1985. In rural areas, the increase was from 11 to 15 per cent over the 10-year period. 19/

In 24 LDCs in Africa, 65 per cent of the urban population had access to safe drinking water in 1985, compared with only 23 per cent of the rural population. In contrast, in 3 Asian LDCs only 32 per cent of the urban population had safe water, compared with 41 per cent of the rural population. Access to adequate sanitation in urban areas in the LDCs and in the rural areas of the African LDCs was similar to the situation for water in 1985 - 65 per cent in urban areas and 29 per cent in rural areas in 17 LDCs in Africa and 27 per cent in urban areas in 3 Asian LDCs. But it was only 7 per cent for sanitation in the Asian LDCs. (See tables H.4 and H.5)

With the slowdown in economic growth in many developing countries in the 1980s, it has become apparent that few of them will reach the ambitious target of 100 per cent coverage with water supply and sanitation originally set for the end of the International Drinking Water Supply and Sanitation Decade (1990). Based on the cross-section relation between percentages served and per capita GDP in 1985, and on the baseline projections of GDP growth for 1990 and 2000, there will be relatively small increases from 1985 to 1990 and 2000 in the percentages with safe water and adequate sanitation in most regions, but the LDCs as a whole will reach only 37% coverage for water and 24% for

sanitation (see tables H.4 and H.5). Additional increases of a few percentage points could be expected with the higher total investment assumed in a scenario for more rapid economic growth. But large increases in coverage would also require an increase in the water supply and sanitation shares of total investment, or significant reductions in average unit costs, and increased efforts to raise sufficient revenues from taxes and user charges to cover the costs of construction, operation and maintenance.

There has been significant growth in the number of countries with average tariffs equal to or higher than costs of production, but not in the poorer regions, including Africa and the least developed countries. The most serious constraints on meeting the goals of the IDWSS Decade in most regions have been funding limitations and inadequate cost recovery frameworks, insufficient trained personnel, and unsatisfactory operation and maintenance. 20/

The cost of constructing facilities for safe drinking water and adequate sanitation for 100 per cent of the population by the year 2000 could be less than 1 per cent of annual GDP during the period from 1986 to 2000, under the 67baseline scenario, in most of the developing countries (1 to 2 per cent in the LDCs), if available low-cost technologies are used 21/. Such technologies include public standpipes rather than individual house connections for water supply, and non-water-borne sanitation (dry-pit privies, night-soil collection, etc.). Water-borne sewage systems for urban areas would cost considerably more to construct, but might have lower costs for operation and maintenance 22/.

Table H.4. Percentage of population with safe drinking water, developing countries 1985-2000 a/

| Country group b | Number of countries | 1985 Population (millions) | 1985 Urban | 1985 Rural | 1985 Total | 1990 Total | 2000 Total |
|---|---|---|---|---|---|---|---|
| North Africa | 4 | 98.7 | 93.0 | 47.1 | 68.1 | 69.0 | 74.0 |
| Sub-Saharan Africa | 39 | 391.3 | 74.7 | 23.0 | 36.2 | 34.4 | 36.3 |
| South and East Asia | 15 | 1386.0 | 69.9 | 46.1 | 52.4 | 54.9 | 61.8 |
| South Asia | 5 | 1006.6 | 74.4 | 46.8 | 53.5 | 56.0 | 63.0 |
| East Asia NIEs | 3 | 49.1 | 92.2 | 49.3 | 79.4 | 85.5 | 96.6 |
| Others | 7 | 330.4 | 49.2 | 43.6 | 45.1 | 46.9 | 53.1 |
| Western Asia and Mediterranean | 7 | 131.3 | 96.6 | 61.3 | 80.6 | 82.6 | 89.8 |
| Western hemisphere | 24 | 388.2 | 84.4 | 46.2 | 72.7 | 73.0 | 74.7 |
| Total | 89 | 2395.6 | 78.5 | 42.4 | 55.2 | 56.4 | 60.6 |
| Least developed countries | 28 | 347.6 | 51.4 | 31.4 | 34.6 | 34.8 | 37.1 |
| Africa | 24 | 186.0 | 64.8 | 23.3 | 30.5 | 30.1 | 31.9 |
| Asia | 3 | 155.6 | 31.5 | 40.8 | 39.5 | 40.6 | 43.7 |
| Haiti | | 5.9 | 59.9 | 30.0 | 37.9 | 36.5 | 37.4 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data compiled by WHO as of June 1989.

a/ Country group figures are averages of individual country percentages weighted by urban, rural or total population.

b Definitions of the country groups are given in the "Explanatory Notes" in Annex I.

Table H.5 Percentage of population with adequate sanitation, developing countries, 1985-2000 a

| Country group b | Number of countries, 1985 | population (millions) | 1985 Urban | 1985 Rural | 1985 Total | 1990 Total | 2000 Total |
|---|---|---|---|---|---|---|---|
| North Africa | 2 | 29.0 | 81.2 | 34.8 | 55.8 | 56.0 | 59.5 |
| Sub-Saharan Africa | 24 | 140.3 | 68.7 | 26.1 | 36.2 | 34.9 | 36.1 |
| South and East Asia | 13 | 1379.9 | 44.3 | 13.3 | 21.5 | 24.1 | 31.9 |
| South Asia | 5 | 1006.6 | 33.6 | 3.1 | 10.5 | 13.8 | 22.7 |
| East Asia NIEs | 2 | 43.6 | 99.9 | 100.0 | 99.9 | 100.0 | 100.0 |
| Others | 6 | 329.7 | 55.1 | 40.7 | 44.6 | 46.4 | 53.7 |
| Western Asia and Mediterranean | 4 | 31.7 | 99.2 | 30.7 | 78.9 | 77.8 | 83.5 |
| Western hemisphere | 22 | 387.6 | 79.2 | 15.4 | 59.5 | 59.0 | 59.6 |
| Total | 65 | 1968.5 | 61.3 | 15.0 | 31.4 | 33.2 | 39.0 |
| Least developed countries | 21 | 261.6 | 44.6 | 15.1 | 19.9 | 20.5 | 23.7 |
| Africa | 17 | 100.1 | 65.5 | 29.0 | 35.8 | 34.4 | 35.3 |
| Asia | 3 | 155.6 | 27.2 | 6.6 | 9.6 | 11.2 | 15.3 |
| Haiti | | 5.9 | 42.0 | 13.0 | 20.9 | 19.3 | 20.1 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data compiled by WHO as of June 1989.

a/ Country group figures are averages of individual country percentages weighted by urban, rural or total population.

b Definitions of the country groups are given in the "Explanatory Notes" in Annex I.

## 5. Access to health services

Access to health services in the developed countries has been largely complete for many years, and a few developing countries report 80 to 100 per cent coverage. Maternal and child health services have increased in most of the developing countries, but care for children under five years of age is still very limited. There has been some progress in the availability of treatment for common diseases and injuries and of essential drugs, but lack of resources and poor transportation and communications are still major obstacles in rural areas.

In all countries, demand for health services of greater complexity has increased. Overcrowded, costly hospitals in urban areas and poorly equipped intermediate health facilities are unable to satisfy the demand. Economically sound approaches are needed to clear this "bottle-neck" in the health care delivery system. Very few countries have incorporated health goals into their adjustment policies in order to minimize the impact of damage to health and to protect high-risk groups most vulnerable to the adverse effects of recent austerity measures. Increased access to food and primary health care is needed, especially for women and children, working populations at high risk and the poor and underprivileged.

Projections of life expectancy indicate that current inequalities in the health situation of women as between developed and developing regions, and between the LDCs and the other developing countries as a whole, will remain largely unaltered by the year 2000. (See tables P.3 and P.4 in Section A,

Population.) Policies to improve health care for women in developing countries, especially in the childhood and reproductive years, should remain a priority, especially in rural areas where maternal mortality rates are highest. Medical examinations and basic medical care should be brought to the village, the school, the farm and other places of employment.

In 1977, the Thirtieth World Health Assembly decided that the main social goal of Governments and WHO in the coming decades should be the attainment by all the people of the world by the year 2000 of a level of health that would permit them to lead a socially and economically productive life. 23/ The key to attaining this goal is to provide primary health care, which is essential health care made accessible at a cost the country and community can afford, with methods that are practical, scientifically sound and socially acceptable. Everyone in the community should have access to it and be involved in it, including the health-related sectors. Primary health care should include education of the community on prevalent health problems and methods of preventing or controlling them; the promotion of adequate food supplies, proper nutrition, sufficient safe water and basic sanitation, maternal and child health care, including family planning; the prevention and control of locally endemic diseases; immunization against the main infectious diseases; appropriate treatment of common diseases and injuries; and the provision of essential drugs.

WHO has estimated that primary health care could be provided in the developing countries for $10 to $15 per person per year (excluding food, water and sanitation). 24/ This is more than most Governments spent for health during the early 1980s (among the developing countries with data), especially

in the LDCs (table H.5). However, the total of governmental and private expenditures (table H.6) would be sufficient to provide primary health care in many countries if the services were priced and distributed more equitably than they are now. In the poorest countries - including many of the LDCs - the total expenditure would have to increase by $5 or $10 per capita (roughly 3 to 4 per cent of GDP per capita), along with development of a wider delivery system to reach more of the rural and low-income urban population. But as little as $1 to $5 per capita could significantly reduce child mortality in many low income countries, if allocated to the most cost-effective means of primary health care and delivered by health care workers paid according to national per capita income levels. 25/

The mobilization and management of financial resources for health have been identified by WHO as critical for achieving the long-term goal of "Health for All" by the year 2000 through primary health care. While financial cutbacks present major problems in the short run, the best long-run options are to tap additional and new sources of domestic resources, and to make more efficient use of all available resources. In many countries, national health plans have been found to be too expensive to fund and implement. A greater mobilization of domestic resources is possible: employers and employees could contribute to health insurance schemes; employers could provide health services directly; public or private institutions might be created to attract voluntary insurance contributions; other schemes of community financing might be developed; and consumers might be required to pay direct fees for some of the health services they use. Recent studies suggest that it would be both equitable and efficient to charge middle-income and upper-income groups for

Table H.5. Government health expenditures per capita, in 1980 dollars a/ (number of countries)

| Country group | Total outlays | | | | Final consumption expenditure | | |
|---|---|---|---|---|---|---|---|
| | 1980 | | 1985 | | Number of countries | 1970 | 1980 | 1985 |
| | All countries | Countries with data for 1985 | | | | | | |
| Developing countries | | | | | | | | |
| North Africa | 18.29 (4) | 10.15 (2) | 12.09 (2) | (2) | | 9.49 | 29.77 | 30.16 |
| Sub-Saharan Africa | 5.92 (16) | 8.99 (8) | 8.33 (8) | (18) | | 6.41 | 6.68 | 6.96 |
| South and East Asia | 3.12 (10) | 3.05 (9) | 4.08 (9) | (9) | | 1.30 | 2.27 | 3.24 |
| South Asia | 2.28 (4) | 2.28 (4) | 3.33 (4) | (4) | | 1.03 | 1.61 | 2.58 |
| East Asia newly-industrialized economies | 7.76 (2) | 7.76 (2) | 10.67 (2) | (1) | | 0.61 | 3.11 | 3.10 |
| Others | 5.08 (4) | 5.13 (3) | 5.88 (3) | (4) | | 5.48 | 10.68 | 12.60 |
| West Asia | 117.93 (2) | 117.93 (2) | 155.70 (2) | (4) | | 16.21 | 48.15 | 41.37 |
| Mediterranean | 175.45 (2) | 175.45 (2) | 140.62 (2) | (3) | | 8.80 | 17.20 | 17.48 |
| Western hemisphere | 41.08 (8) | 39.34 (3) | 37.28 (3) | (8) | | 21.36 | 24.13 | 27.49 |
| Subtotal, developing countries | 8.86 (42) | 7.49 (26) | 7.81 (26) | (44) | | 3.85 | 6.84 | 7.70 |
| Least developed countries | 2.07 (13) | 2.04 (7) | 2.08 (7) | (12) | | 2.41 | 1.92 | 2.08 |
| Africa | 3.09 (11) | 5.45 (5) | 5.06 (5) | (11) | | 4.66 | 3.42 | 3.92 |
| Asia | 1.32 (2) | 1.32 (2) | 1.43 (2) | (1) | | 0.82 | 0.86 | 0.76 |
| China | 6.70 (1) | | b/ | | | b/ | b/ | b/ |
| Developed market economies | 552.58 (23) | 552.58 (23) | 569.70 (23) | (15) | | 154.94 | 226.24 | 240.46 |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on country data from United Nations Statistical Office, National Accounts Statistics data bank tables 2.1, 2.3, 2.5; IMF, Government Finance Statistics Yearbook 1987, p. 98, and World Bank, Financing Health Services in Developing Countries, Washington D.C., 1987, table 3, p. 16.

a/ Country group averages are weighted by population.

b/ Not available.

Table H.6. Government and private 1980 health expenditures per capita, in 1980 dollars a/ (number of countries)

| Country group | Government total outlays | Private expenditure b/ |
|---|---|---|
| Developing countries | | |
| North Africa | 18.29 (4) | 10.14 (2) |
| Sub-Saharan Africa | 5.92 (16) | 7.71 (16) |
| South and East Asia | 3.12 (10) | 8.20 (11) |
| South Asia | 2.28 (4) | 3.89 (3) |
| East Asia newly-industrialized economies | 7.76 (2) | 57.37 (3) |
| Others | 5.08 (4) | 12.63 (5) |
| West Asia | 117.93 (2) | 51.30 (2) |
| Mediterranean | 175.45 (2) | 59.93 (2) |
| Western hemisphere | 41.08 (8) | 56.10 (9) |
| Total, developing countries | 8.86 (42) | 14.41 (42) |
| Least developed countries | 2.07 (13) | 5.34 (10) |
| Africa | 3.09 (11) | 5.34 (10) |
| Asia | 1.32 (2) | c/ |
| China | 6.70 (1) | 3.16 (1) |
| Developed market economies | 552.58 (23) | 519.94 (24) |

Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on sources for table IX.18.

a/ Country group averages are weighted by population.

b/ Includes some expenditures by missions and non-governmental organizations, as well as private expenditures on health care, as estimated by the World Bank.

c/ Not available.

curative services, thus preventing excessive consumption of free services and allowing limited government funds to provide health care to more of the low-income population. Even if it is necessary to charge user fees to low-income groups, this can provide better health to more people than systems that rely on inadequate government funds. 26/

Even if health, broadly conceived, is accorded very high priority, national development planners must still try to estimate the relative effectiveness of alternative allocations of limited resources among investments and operating expenses for local clinics and other facilities for primary health care, high-technology hospitals, modern and traditional medical training, public health education, nutrition programmes, safe water supply and sanitation, shelter, etc. 27/ Focusing on specific goals and timetables, such as reducing the infant mortality rate below 50 by the year 2000, helps to mobilize the necessary resources. 28/

The recent rise in concern with cost-containment in many countries is likely to continue throughout the 1990s. Determining the appropriate mix of public and private services, providers and funding sources will call for considerable research and public policy debate. There is substantial room for improvement in the cost-efficient allocation of resources among drugs, surgery and other methods of health care. A strong case can also be made for a reorientation of health services towards primary health care and rural areas.

1/ WHO, Evaluation of the Strategy for Health for All by the Year 2000, Seventh Report on the World Health Situation, Geneva, 1987, p.73.

2/ WHO, Maternal Mortality Rates, a Tabulation of Available Information, second ed., Geneva, 1986.

3/ World Population Trends and Policies: 1989 Monitoring Report, United Nations, ESA/P/W.P.107, 1 February 1989, paras. 447-448. (The final version of the report will be published with the title World Population Monitoring 1989, ST/ESA/SER.A/113).

4/ Based on WHO, Evaluation of the Strategy for Health for all by the Year 2000, Seventh Report on the World Health Situation, Geneva, 1987, pp. 75-85, and other sources as noted.

5/ UNICEF, State of the World's Children 1988, p.17.

6/ The New York Times, 9 February 1988.

7/ World Health Organization, "Update: AIDS Cases Reported to Surveillance, Forecasting and Impact Assessment Unit (SFI), Global Programme on AIDS", 30 September 1989 (mimeo), and Mann, Jonathan M, "Global AIDS into the 1990s", address presented at the Fifth International Conference on AIDS, Montreal, Canada, 4 June 1989.

8/ The New York Times, December 1, 1989, p. D 19.

9/ WHO Global Programme on AIDS, October 1989.

10/ World Population Trends ..., op. cit., 1989, para. 449.

11/ The New York Times, December 8, 1989, p. A 1.

12/ World Population Trends...op.cit., 1989, para. 449.

13/ Ibid., paras. 472-475.

14/ First Report on the World Nutrition Situation, United Nations ACC/SCN, November 1987, p.i.

15/ WHO, Evaluation of the Strategy for Health for all by the Year 2000, Seventh Report on the World Health Situation, Geneva, 1987, (op. cit.) p.88.

16/ See ACC/1987/14, paras. 56-60.

17/ "Update on the Nutrition Situation - Recent Trends in Nutrition in 33 Countries", United Nations ACC/SCN, January/February 1989, Chapter 3.

18/ WHO, The International Drinking Water Supply and Sanitation Decade, 1981-1990, CWS Series of Co-operative Action for the Decade, Geneva, September 1987, Tables A.3.2.1 and A.3.2.3., pp.23, 25 and subsequent revisions in WHO's data bank.

19/ Ibid., tables A.3.2.2 and A.3.2.4, pp. 24, 26, and subsequent revisions in WHO's data bank.

20/ WHO, The International Drinking Water Supply and Sanitation Decade, 1981-1990, op.cit., p.14.

21/ Based on the baseline scenario of GDP and on country and regional unit costs per capita reported in (WHO) The International Drinking Water Supply and Sanitation Decade, Review of mid-Decade Progress (as at December 1985), CWS series, September 1987.

22/ For more detailed reviews of alternative systems for water supply and sanitation, see Global Report on Human Settlements 1986, published by Oxford University Press for the United Nations Centre for Human Settlements (Habitat), 1987, pp. 148-153, and Mahesh S. Patel, "Eliminating Social Distance between North and South, Cost-effective Goals for the 1990s," UNICEFF Staff Working Paper Number 5, October 1989, Annex 16.

23/ This goal and its accompanying strategy have been endorsed by the United Nations General Assembly in its resolutions 34/58 of 29 November 1979 and 36/43 of 19 November 1981.

24/ According to estimates made in the early 1980s, which had not been revised as of early 1988.

25/ Patel, op.cit.

26/ For more detailed review of these issues, see World Bank, Financing Health Services in Developing Countries, an Agenda for Reform, Washington D.C., 1987. For a review of the effects of user charges, including a case study comparing the fee structures of government and mission health centres in Rwanda, see Donald S. Shepard and Elizabeth R. Benjamin, "User Fees and Health Financing in Developing Countries: Mobilizing Financial Resources for Health", in David E. Bell, and Michael R. Reich, eds., Health, Nutrition, and Economic Crises, Approaches to Policy in the Third World, Dover Massachusetts (United States of America), Auburn House Publishing Co., 1988, pp. 401-424.

27/ For further analysis of goals and estimated costs of the WHO Strategy for Health or All by the Year 2000, see Patel, op.cit., and Mahesh Patel, "An Economic Evaluation of 'Health for All'", in Health Policy and Planning (Oxford University Press) vol. I, No. 1, 1986, pp.37-47.

28/ ACC/1987/14, para. 70. For a comparison of the cost-effectiveness of different aspects of primary health care in reducing child mortality, see Patel, op.cit,. Chapters III-V.

## Annex 1. Explanatory Notes

The designations employed and the presentation of the materials in this report do not imply the expression of any opinion whatsoever on the part of the United Nations Secretariat concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term "country" as used in the text of this report classified into the following groups:

| | |
|---|---|
| Eastern Europe and the USSR: | Union of Soviet Socialist Republics, Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Roumania; |
| China and the centrally planned economies of Asia: | China, Democratic People's Republic of Korea, Mongolia, Viet Nam; |
| Developed market economies: | North America, southern and western Europe (excluding Cyprus, Malta and Yugoslavia), Australia, Israel, Japan, New Zealand, South Africa; |
| Developing countries: | Latin America and the Caribbean, Africa (other than South Africa), Asia (excluding China and the centrally planned economies of Asia, Israel and Japan), Oceania (excluding Australia and New Zealand), Cyprus, Malta, Yugoslavia; |

For particular analyses, the developing countries for which relevant data are available have been subdivided into the following regional groups:

| | |
|---|---|
| North Africa: | Algeria, Egypt, Libyan Araba Jamahiriya, Morocco, Tunisia; |
| Sub-Saharan Africa: | Developing countries in Africa, except North Africa; |
| Latin America and the Caribbean: | Developing countries in the Western Hemisphere; |
| Mediterranean: | Cyprus, Malta, Turkey, Yugoslavia; |
| Western Asia: | Bahrain, Democratic Yemen, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen; |

| | |
|---|---|
| South and East Asia: | Afghanistan, Bangladesh, Bhutan, Democratic Kampuchea, Fiji, Hong Kong, India, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand. |